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EIGHTEENTH BIENNIAL REPORT
OF THE
NORTH CAROLINA
STATE BOARD OF HEALTH

1919-1920

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OF THE

North Carolina State Board
of Health

1919-1920



RALEIGH
EDWARDS & BROUGHTON PRINTING CO.,
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1921

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Members of the State Board of Health

Elected by the North Carolina Medical Society.

THOMAS E. ANDERSON, M.D., Statesville

Term expires 1923

CHARLES O'H. LAUGHINGHOUSE, M.D., Greenville

Term expires 1923

F. R. HARRIS, M.D., Henderson

Term expires 1925

CYRUS THOMPSON, M.D., Jacksonville

Term expires 1925

Appointed by the Governor.

J. L. LUDLOW, C. E., Winston-Salem

Term expires 1921

J. HOWELL WAY, M.D., Waynesville

Term expires 1923

RICHARD H. LEWIS, M.D., L.L.D., Raleigh

Term expires 1925.

E. J. TUCKER, D.D.S., Roxboro

Term expires 1925

A. J. CROWELL, M.D., Charlotte

Term expires 1923

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Letter of Transmittal

RALEIGH, N. C., January 1, 1921.

*His Excellency, T. W. BICKETT,
Governor of North Carolina.*

MY DEAR SIR:—Under authority of section 3, chapter 62, Public Laws of 1911, as amended by the General Assembly of 1913, I have the honor to submit the Biennial Report of the State Board of Health for the years 1919 and 1920.

Very respectfully yours,
W. S. RANKIN,
Secretary and Treasurer.

Preface

The same principles have influenced the preparation of this biennial report as governed the preparation of our last report; therefore, the preface of the last report is altogether pertinent to this one, and we trust we may be pardoned for the repetition:

"It is our intention to smash precedent in the size and substance of biennial reports. The large size of the average biennial report appears to rest on the hope of impressing those to whom it is addressed (not the few who read it) with the size rather than with the contents of the report. The size alone of most of these reports precludes their being read by busy people; and it makes little difference whether the other class does or does not read them. There is a story of a young reporter who was directed by a large New York paper to report a certain lynching of unusual public interest. The young reporter wired his paper to hold three columns for his story. The editor wired the reporter to confine himself to one column. The young reporter, in the atmosphere of the lynching, could see only the importance of the lynching, and wired back to the paper that it was impossible to restrict his story to a single column. The business manager telegraphed, 'Description whole creation covered in Genesis one. Read it.'

"With this idea of brevity, and with the hope of reaching busy people, we have sought the avoidance (1) of matter that can be obtained easily from other publications, and (2) of matter consisting largely of details and statistics that is of little general interest and that can be more conveniently supplied to those interested in the form of supplementary reports. For example, the State public health laws, the itemized statement of the bookkeeper, and the vital statistics of the State have been excluded from the report. Any or all of this matter may be obtained in separate form by request of the State Board of Health.

"The arrangement of this report is by fairly independent subdivisions, so that it is possible for one to read and understand any part of the report without reading the whole report."

Development of Public Health Work

PUBLIC HEALTH WORK IN GENERAL

Prior to the seventeenth century our study and our knowledge of disease was confined to the manifestations of symptoms of disease, and the treatment of disease was purely empirical, and not rational. There was little known about the causes of disease and how to prevent disease. The light began to break in 1683, when Anthony van Leeuwenhoek, a lens polisher, discovered germs in spittle. This discovery of van Leeuwenhoek was confirmed by others, but little progress was made in associating germs with diseases for nearly a century afterwards. At this time, that is, along in the eighteenth century, the relation of the germs discovered by van Leeuwenhoek to disease began to be considered. One set of students took the position that the germs found in putrefying matter or fermenting fluids or the diseased bodies were not the cause of decomposition or fermentation or disease, but the effect; the other set of students took the position that the germs were the cause of decomposition, fermentation, and disease. The debate on this interesting question occupied the best scientific minds for a century, and was not finally settled until Pasteur and Tyndall, in the nineteenth century, between 1860 and 1880, performed certain conclusive experiments, showing that these lower forms of life were causes and not consequences of disease. The essential features of this long-continued and interesting scientific debate can be found in any well known text-book on bacteriology, and the evidence in its details upon which the scientific world came to its verdict of germs as the cause of disease will not be rehearsed here. Suffice to say, in passing, that the actual and convincing results of prevention during the last thirty or forty years have been accomplished by proceeding upon this scientific principle of germs as the cause and not the consequence of disease; and the proof of the pudding is in the eating.

Little headway in the association of specific germs with diseases was made until well into the nineteenth century. In 1863 Devane proved that anthrax in sheep was due to a specific germ. In 1873 Obermeier discovered the cause of relapsing fever. In the early seventies septic infections or blood poison and the suppuration of wounds was practically demonstrated to be due to germs. Lord Lister's basic discovery in antiseptic surgery naturally followed, and the science of surgery as we know it today was born at about this time, 1875. In 1879 the germ causing leprosy was discovered and, in the same year, Neisser discovered the germ causing gonorrhea. In 1880 the typhoid fever germ, the pneumonia germ, and the germ causing chicken cholera were discovered; and in the same year Laveran discovered the germ causing malaria. In 1882 Koch discovered the germ of tuberculosis, and Loeffler and Shutz discovered the germ of glanders. In 1884 Koch discovered the germ of Asiatic cholera and Loeffler the germ of diphtheria and Nicolaier

the germ of lockjaw or tetanus. In 1892 the germ of influenza was discovered, and in 1894 the germ of bubonic plague was discovered.

The important facts to note in this connection is that between the years 1875 and 1895 the specific causative germs of fifteen important diseases were discovered. Out of these discoveries and based upon this knowledge of certain diseases being due to seeds or germs, and of the way in which these seed or germs are conveyed from the sick to the well, that is, the means by which disease is spread, public health activities and public health organizations, the definite and active participation of the Government in the control of disease came into existence. This fact explains the following table, giving the dates of the establishment of the various State boards of health:

Name of State	Date Established
District of Columbia	1822
Louisiana	1855
Massachusetts	1869
California	1870
Minnesota, Virginia	1872
Michigan	1873
Maryland	1874
Alabama	1875
Wisconsin	1876
Illinois, Mississippi, New Jersey, North Carolina, Tennessee	1877
Connecticut, Kentucky, Rhode Island, South Carolina	1878
Delaware	1879
Iowa, New York	1880
Arkansas, Indiana, New Hampshire, West Virginia	1881
Missouri	1883
Kansas, Maine, Pennsylvania	1885
Ohio, Vermont	1886
Florida, North Dakota	1889
Oklahoma	1890
Nebraska, Washington	1891
Colorado, Nevada	1893
South Dakota	1895
Utah	1898
Montana, Wyoming	1901
Arizona, Georgia, Oregon, New Mexico	1903
Idaho	1907
Texas	1909

Note that in the same period, from 1875 until 1895, twenty years, in which more specific causes of diseases were discovered (15 specific disease germs) than in any other like period of time, thirty-three States organized their State boards of health, declared war on man's common enemy, and entered the fight for better protection of health and life.

Once the Governments of the various States having launched a fight against disease, the development of the State agencies for State health work has gone along hand in hand with the accumulation of positive proof, in the form of decreasing death rates, of the practicability of disease prevention. The bulk of this important evidence can be seen in the following table:

GENERAL DEATH RATE OF THE UNITED STATES (REGISTRATION AREA) 1880-1919

Year	Population	Rate per 1,000
1880.....	8,538,000	19.8
1890.....	19,659,440	19.6
1900.....	30,765,618	17.6
1905.....	34,095,605	16.0
1910.....	53,843,896	15.0
1913.....	63,299,164	14.1
1914.....	65,989,295	13.6
1915.....	67,336,992	13.5
1916.....	71,621,632	14.0
1917.....	75,307,906	14.2
1918.....	81,868,104	*18.0

Note in this table the following significant facts: first, the noticeable decline in the death rate since 1880; second, that the rate of decline was slow from 1880 to 1890 and rapid from 1890 to 1915. The slow period, from 1880 to 1890, corresponds with the decade during which the foundation for the prevention of disease was being laid and before the new knowledge had filtered out of the research laboratories into the world at large. The period of rapid decline, since 1890, is synchronous with the assimilation of this new knowledge by the public. In the twenty-five years between 1890 and 1915 there has occurred a 30 per cent reduction in the death rate, which is equivalent to a saving, if such a reduction applies generally throughout the United States, of 600,000 lives a year. Third, the decline in death rates were steady and uninterrupted from 1880 to 1915, since when there was a slight increase in 1916 and 1917, the first year corresponding to the disturbed economic conditions resulting from the war, and the second year's increase, that of 1917, corresponding to a continuation of disturbed economic conditions and aggravated by the concentration of millions of men in cantonments and camps, making possible the more easy spread of infections. The heavy increase in the general death rate of 1918 was, undoubtedly, attributable to the extensive and highly fatal type of influenza which prevailed in that year, causing altogether 477,467 deaths.

We can see the influence of the increasing momentum of the public health movement by turning to the census reports on the mortalities of the important diseases. For example, the death rate from typhoid fever in 1890 was 46.27 per hundred thousand of the population. That death rate has steadily decreased to 12.5 deaths per hundred thousand of the population in 1918, a decrease of about 72 per cent—equivalent to the saving of 34,000 lives a year from this one disease. Tuberculosis has decreased from 245 deaths per hundred thousand population in 1890 to 150 deaths per hundred thousand population in 1918—a decrease of little more than 38 per cent, amounting to the saving of nearly 100,000 annually. Measles, scarlet fever, and whooping cough have decreased about 25 per cent in this period of time. Diphtheria, on account of the discovery of antitoxin, decreased 80 per cent, which amounts to a saving of 80,000 lives annually.

*The influenza epidemic in 1918 caused 477,467 deaths, hence the high general death rate.

PUBLIC HEALTH WORK IN NORTH CAROLINA

In the seventies Dr. Thomas Fanning Wood of Wilmington, caught the vision of the possibilities of public health work to North Carolina. How fully he grasped the far-reaching consequences of his idea, how clearly he saw the ever-growing hosts of lives saved as a result of his vision and inspiration, we shall never know. We do know that the vision never left him, and that under its sway he worked, through the *Medical Journal* which he edited and through the North Carolina State Medical Society, until his influence reached the people of the State in their General Assembly of 1877, with the effect that on February 12, 1877, the North Carolina State Board of Health was born. Ours was the twelfth State board of health to be established.

Without treating the development of the newly established board with that thoroughness that could be termed history, we think it enough to set down here in chronological order the principal events in the life and growth of the North Carolina State Board of Health.

- 1877. Board created. Consisted in the beginning of entire State Medical Society. Society acted through a committee. Annual appropriation, \$100.
- 1878. First educational pamphlet issued. Subject, "Timely Aid for the Drowned and Suffocated." Annual appropriation, \$100.
- 1879. The General Assembly reconstituted the Board of Health. Made it to consist of nine members: six appointed by the Governor, three elected by the State Medical Society. Term of office, five years. Dr. Thomas F. Wood elected first Secretary of the Board, May 21. Other legislative provisions: (1) Chemical examination of water, and (2) organization of county boards of health, composed of all regular practicing physicians and, in addition, the mayor of the county town, the chairman of the board of county commissioners, and the county surveyor. Four educational pamphlets issued. Subjects: "Disinfection, Drainage, Drinking-water, and Disinfectants"; "Sanitary Engineering"; "Methods of Performing Post-mortem Examinations"; "Limitation and Prevention of Diphtheria." Annual appropriation, \$200.
- 1881. General Assembly passed a law requiring registration of vital statistics at annual tax listing; law ineffective. Annual appropriation, \$200.
- 1885. General Assembly made county boards of health more efficient; allowed printing privileges not to exceed \$250 annually. Annual appropriation, \$2,000.
- 1886. Bulletin made its appearance in April. Pamphlet on "Care Eyes and Ears," by Dr. Richard H. Lewis, printed and distributed. Subsequent Legislature provided for extra edition of 10,000 copies for general distribution. Annual appropriation, \$2,000.
- 1888. Yellow fever epidemic in Florida and refugees to western North Carolina demonstrated value of a Board of Health to cope with situation. Annual appropriation, \$2,000.
- 1892. Dr. Thomas F. Wood, the Secretary of the Board, died August 22. Dr. Richard H. Lewis elected Secretary to succeed Dr. Thomas F. Wood, September 7. Annual appropriation, \$2,000.

1893. Legislative provisions: (1) Laws improving the reporting of contagious diseases, (2) the protection of school children from epidemics, (3) protecting the purity of public water supplies, and (4) regulation of common carriers. Legislature provided that Governor appoint five of the nine members of the Board of Health, that the State Medical Society elect four, and that the term of office of the members of the State Board of Health be reduced from five to two years. The \$250 printing limit was removed. Pamphlet on quarantine and disinfection was prepared and reprinted by many of the State papers. Annual appropriation, \$2,000.
1894. A number of public health conferences were arranged and held in different towns of the State. Bulletin was increased from a mailing list of 800 to 1,200. Annual appropriation, \$2,000.
1895. Dr. Albert Anderson and Dr. W. T. Pate were elected bacteriologists for the board. Annual appropriation, \$2,000.
1896. Board passed a resolution requiring chemical and bacteriological examinations of municipal water supplies. Dr. Venable of Chapel Hill undertook the chemical examination, and Drs. Anderson and Pate the bacteriological examination. Board also directed Mr. John C. Chase, the engineer member, to inspect all municipal water plants in the State. Annual appropriation, \$2,000.
1897. General Assembly enacted law requiring county superintendents of health to be elected by county commissioners, and reduced term of office to one year. Annual appropriation, \$2,000.
1899. General Assembly improved the laws protecting public water supplies. Smallpox prevailed extensively in the State. Dr. Henry F. Long, and later, on Dr. Long's resignation, Dr. Joshua Tayloe were employed to travel over the State, consulting with and advising the local sanitary authorities as to proper means for protecting the public. Annual appropriation, \$2,000.
1900. State Board of Agriculture, on request of State Board of Health, agreed to examine samples of water, from public water supplies until Board of Health could provide its own examiner. Annual appropriation, \$2,000.
1901. State Board of Embalmers, with representatives of State Board of Health, established. County health work placed in the hands of county sanitary committees composed of county commissioners and two physicians which commissioners elected to serve with them. Term of office of county superintendent of health made two years. Annual appropriation, \$2,000.
1903. General Assembly enacted law permitting Board of Health to charge \$5 for each analysis of a public water supply, this fee to be used in paying Department of Agriculture for services of examiner. Dr. C. W. Stiles, U. S. P. H. S., before the State Medical Society at Hot Springs called attention to prevalence of hookworm disease in the South. Dr. J. L. Nicholson and Dr. W. S. Rankin, working under State Board of Health during fall of 1903 and spring of 1904, showed great prevalence of this disease in North Carolina. Annual appropriation, \$2,000.
1904. A stenographer was employed. One hundred and twenty thousand pamphlets on tuberculosis were printed and distributed. There was

a renewal and an extension of coöperative work between the Board of Health and the State press, a number of articles dealing with hygienic and sanitary subjects being furnished the papers and published in them. Annual appropriation, \$2,000.

1905. General Assembly established State Laboratory of Hygiene; imposed water tax of \$64 on all public water companies; voted \$600 annually for support of Laboratory. Small appropriation made it necessary for the Department of Agriculture to continue to assist State Board of Health. Annual appropriation, \$2,600.
1906. The North Carolina Association for the Study and Prevention of Tuberculosis was organized. Annual appropriation, \$2,600.
1907. Two thousand dollars appropriated for the State Laboratory of Hygiene. Pasteur treatment provided. State sanatorium for treatment of tuberculosis founded: \$15,000 appropriated for permanent improvements and \$5,000 for maintenance. A law requiring the separation of tuberculous prisoners from other prisoners was enacted. Annual appropriation, \$4,000.
1908. January 1, Dr. C. A. Shore became Director of State Laboratory of Hygiene. Annual appropriation, \$4,000.
1909. General Assembly provided for (1) whole-time State Health Officer; (2) collection of vital statistics of towns having a population of 1,000 or over; (3) that all public water companies file plans and specifications of their plants with the State Board of Health, and that the State Board of Health pass necessary rules and regulations for the care of public watersheds and plants and furnish such rules and regulations and other advice to those having charge of public water supplies; (5) that counties provide free diphtheria antitoxin for county indigents; and (6) that the maintenance appropriation for the Sanatorium be increased from \$5,000 to \$7,500, and an additional \$30,000 be granted for permanent improvements. Dr. Richard H. Lewis resigned as Secretary of the Board, and Dr. W. S. Rankin was elected as his successor, beginning his official work July 1. Annual appropriation, \$10,500.
1910. General effort to interest the people and State organizations in public health work. Bulletin increased from 3,500 edition to 10,500 edition. Addresses on public health work delivered to Conference of County Superintendents of Schools, State Federation of Women's Clubs, State Press Association, and Sanitary Sunday observed in April. Dr. John A. Ferrell elected, February, Assistant Secretary for Hookworm Eradication; began work under State Board of Health and Rockefeller Sanitary Commission. First effort in the eradication of hookworm disease was to interest school teachers in the disease and through their assistance examine and treat the children, and thereby reach the community. Three bottled spring waters sold on the market, examined, found polluted, and public attention called to the pollution. Annual appropriation, \$10,500.
1911. Legislature established county boards of health to take the place of the county sanitary committees; county board of health composed of chairman board of county commissioners, county superintendent of schools, mayor of county town, and two physicians selected by the three county officials to serve with them. Legislature also abolished

quarantine for smallpox and improved the quarantine laws. One thousand dollars annually appropriated to contract with antitoxin manufacturers for State supply of high-grade diphtheria antitoxin, with result that price of antitoxin was cut to one-fourth former price, saving the citizens of the State over \$30,000 annually. Bulletin increased from 11,500 copies to 20,000 copies each edition; closer coöperation with press of State developed; regular weekly press articles prepared and sent to papers; increase in numbers of popular pamphlets for distribution. Hookworm work this year largely educational through the school forces and investigative through county dispensaries; thousands of children found infected and treated. Strong sentiment began to make itself felt for better health work by counties, four counties employing whole-time county health officers. Maintenance appropriation for State Sanatorium increased to \$12,500, with \$20,000 voted for permanent improvements. Annual appropriation, \$22,500.

1912. Bulletin increased to 40,000 edition; number of popular pamphlets dealing with different diseases increased; press work improved; educational work of Board along all lines amplified. Secretary of Board of Health called attention of conjoint meeting of State Medical Society and State Board of Health to the relative importance of health problems and the bearing of this subject upon the proper apportionment of health funds; instrumental in passing a resolution to the effect that pellagra was an interstate problem, not a State problem, and requesting the Federal Government to deal with pellagra as a Federal problem; resolution responsible, to considerable extent, for successful effort on part of Hon. John M. Faison's securing Congressional appropriation of \$45,000 for the study of pellagra by the Federal Government. Hookworm work extended and county funds appropriated to supplement State and Rockefeller Foundation for this work. Annual appropriation, \$22,500.
1913. General Assembly passed Model Vital Statistics Law with \$10,000 appropriation for its enforcement. County superintendents of health changed to either county physician or county health officer. Educational efforts of Board continued and enlarged. Hookworm work along same line as year before increased in amount. Dr. John A. Ferrell resigned as Assistant Secretary to accept position with the central office of the Rockefeller Sanitary Commission in Washington, D. C. Dr. C. L. Pridgen succeeded Dr. Ferrell. The movement for improved county health work had by this time resulted in ten counties electing whole-time county health officers. The State Sanatorium for Treatment of Tuberculosis turned over by Extra Session of 1913 to the management of State Board of Health. Annual appropriation \$40,500.
1914. Preceding work of the Board continued. Board of Health took over management of Sanatorium; started out under many difficulties on account of the institution owing many debts and the appropriation being limited. Hookworm work changed to community work directed to the installation of sanitary privies in all homes. Laboratory began to produce and distribute free antityphoid vaccine. Dr. C. L. Pridgen

resigned as Director Hookworm Eradication, and Dr. W. P. Jacocks succeeded him. Annual appropriation, \$40,500.

1915. General Assembly makes State vital statistics law conform to National model by requiring burial permits in rural communities; enacts legislation permitting county commissioners and towns and cities to appropriate money for support of tuberculous citizens in State Sanatorium; provides \$15,000 for purchase and building of antitoxin plant; appropriates \$60,000 for payment of Sanatorium debts and new buildings and other improvements, and \$25,000 annually for maintenance and \$10,000 for extension antituberculosis work. Educational work greatly extended: Bulletin now 47,000; traveling public health exhibit shown at fairs and other assemblages; press work greatly developed through employment of journalist for whole time; stock lectures with lantern slides supplied public speakers in different parts of the State. Community soil pollution work under Dr. W. P. Jacocks stops in May, and Bureau of County Health Work with Dr. G. M. Cooper at its head, succeeds, beginning work in June. Considerable amount of work done for improvement of prison conditions. The unit system of county health work gets a good start: over 52,000 people given three complete vaccinations against typhoid fever, and medical inspection of schools put on in one county. Annual appropriation, \$50,500.

1916. North Carolina was admitted to the Registration Area for deaths. To the educational agencies of the Board was added a self-supporting moving picture health show. Many saw this show during the year, and, seeing, believed in health work as never before. Bulletin had to be discontinued temporarily for lack of printing funds, but before discontinuance reached 51,000 edition. Coöperation with University in developing a plan and putting on a home post-graduate course in medicine, giving first course to 169 doctors. Put into operation an optional system of hotel inspection, with grading and publishing scores. Continued unit system of county health work, giving three antityphoid injections to 48,000, making 100,000 immunized in summers of 1915 and 1916. Did complete medical inspection of five counties and with inspection a large amount of educational work as to sanitary and hygienic living. Secured effort by Federal Children's Bureau to develop unit of child hygiene work, the Bureau using two employees to work in Cumberland and Swain counties for about eight months. Laboratory of Hygiene buys land and erects its own building. Sanatorium making a decided impression on the State. Annual appropriation, \$55,500.

1917. The General Assembly passed the following important health legislation: Chapter 263, entitled "An act to prevent and control the occurrence of certain infectious diseases in North Carolina"; chapter 244, entitled "An act to provide for the physical examination of the school children of the State at regular intervals"; chapter 276, entitled "An act for the coöperative and effective development of rural sanitation"; chapter 257, entitled "An act to prevent blindness in infancy, designating certain powers and duties and otherwise providing for the enforcement of this act"; chapter 66, entitled "An act to provide for the sanitary inspection and conduct of hotels and restau-

rants"; chapter 286, entitled "An act to regulate the treatment, handling and work of prisoners."

Following the enactment of this legislation, administrative machinery, consisting of a Bureau of Epidemiology under the direction of Dr. A. McR. Crouch, a Bureau for the Medical Inspection of Schools under the direction of Dr. Geo. M. Cooper, and a Bureau for County Health Work under the direction of Dr. B. E. Washburn, was established. Dr. Washburn, an officer of the International Health Board, was loaned to the State without cost and the International Health Board, in addition to furnishing Dr. Washburn, appropriated \$15,000 annually for rural sanitation in accordance with the provisions of chapter 276.

The United States Public Health Service in February, 1917, detailed Dr. K. E. Miller to study county health work in different sections of the country and to establish for demonstration purposes, in Edgecombe County department of health on an economic basis easily within the financial reach of the average county.

The State Laboratory of Hygiene moved into its own building January 15, 1917.

The State was admitted to the registration area of the Union for births in January, 1917, the Bureau of the Census having found after investigation that our birth registration was 96 per cent complete.

The special campaign against typhoid fever, begun so satisfactorily in 1915, was continued. Free vaccination of the people, however, was interferred with by the difficulty in securing medical officers to do the work, the preparedness program of the Government having caused many physicians and nurses to enter the Army and Navy; nevertheless, a total of 30,000 citizens of the State were vaccinated as a direct result of the Board's activities, and many thousands of others were vaccinated by the physicians of the State as a result of the educational work of the Board directed to impressing the people with the value of vaccination as a means of prevention for typhoid fever.

In December, 1917, life extension work as developed by the Life Extension Institute of New York, which consisted briefly of the free physical examination of interested citizens for the purpose of advising them as to their physical condition and needed hygienic reform and medical treatment, was begun on a county basis. The funds necessary for this work were appropriated partly by the State and partly by the counties in which the life extension work was carried out. Dr. Amzi J. Ellington, who at the time was a resident physician in the New York City Hospital and who had during his residency in that institution studied the methods of the Life Extension Institute under Dr. Eugene Lyman Fisk, was employed and placed in charge of the work. Life extension work was carried out in Vance, Alamance, Lenoir and Robeson counties, and resulted in the full physical examination of 4,000 citizens. This work was very favorably received, and the outlook for its continued development seemed excellent when, with the declaration of war and the call for physicians to enter the military service of the country, Dr. Ellington enlisted in the Medical Corps of the Army. For this reason, and

for the further reason that it has been almost impossible to secure health officers during the past two years, the work was not resumed.

The educational work of the State Board of Health consisted in the issuance of eight Bulletins, each monthly edition amounting to 45,000, and a daily newspaper health article. The Bureau continued its moving picture show exhibit and, in addition, prepared probably the best three-dimension educational exhibit in the United States. In 1917, the following exhibits were given: motion picture entertainments, 236; traveling public health exhibits, 32; special exhibits, 58; stereopticon entertainments, 3;—to a total of 95,000 people. Arrangements were made for the preparation of newspaper plate, which was sent to and extensively used by 202 papers having a total circulation of 303,000. A large part of this newspaper material was prepared by the well-known authority and publicist in matters of sanitary and hygienic education, Dr. W. A. Brady, of Elmira, New York.

The annual appropriation for the State Board of Health was \$60,772.16. The annual appropriation for the State Laboratory of Hygiene was \$12,500, and this, in addition to \$9,087.22 in fees permitted under the laws of the State to be paid to the Laboratory for special work, provided the Laboratory with a total annual budget of \$21,587.22.

1918. Much of the work this year was influenced by the war and had to do with preparedness. The State Health Officer visited Washington, at the request of the Council of National Defense and as chairman of a committee of State Health Officers, on a number of occasions for conferences with respect to preparedness measures, provisions for the control of venereal diseases, arrangements for coördinating the control of infectious diseases in the civilian population with their control in cantonments, and to arrange, if possible, with the Public Health Service and the Surgeon General of the Army for preserving the personnel of State health departments during the war. The State Health Officer also made a visit to the States of South Carolina, Georgia, Alabama and Florida for the Council of National Defense in order, if possible, to interest the Governor, the State Board of Health, and the State Council of Defense in venereal disease control.

Considerable time was given to assisting Major John W. Long, Medical Aide to the Governor, in the work of organizing the Medical Advisory Boards and in interesting physicians in entering the medical service of the Army and Navy, and, later in the year, in inducing the physicians of the State to become members of the Volunteer Medical Service Corps.

Partly as a result of these activities, the Surgeon General of the Army assigned Major Joseph J. Kinyoun to assist the State Board of Health in the control of communicable diseases, the Board being under no financial obligation for Major Kinyoun's assistance; and as a result of the successful termination of the activities of various interests looking to a more effective control of venereal diseases, the Kahn-Chamberlain Bill passed Congress, and made available to the State of North Carolina, and without condition, \$23,988.61 for venereal disease work.

The Laboratory during this year began the distribution of a high grade of diphtheria antitoxin.

The Bureau of Medical Inspection of Schools developed, and with a degree of success that we may say established, free dental clinics for the public schools of the State. The Bureau also developed to a successful extent an arrangement in the form of adenoid and tonsil clubs for the practical and economic treatment of public school children suffering from these defects.

The Bureau of Epidemiology employed two third-year medical students, equipped them with motorcycles, and put them into the field to investigate infringements of the quarantine law. Sufficient convictions were obtained to impress the medical profession with the determination of the State to enforce its health laws, and a fairly satisfactory compliance with the laws regarding the reporting of communicable diseases was brought about.

The Bureau of Venereal Diseases, paid for by the Federal appropriation, was established in September under the directorship of Dr. James A. Keiger, of Charlotte, N. C.

Mr. Warren H. Booker, for the last seven years the efficient director of the Bureau of Engineering and Education, left in September for Red Cross work in France, the work of his Bureau being continued, with the exception of the engineering work, by Mr. Ronald B. Wilson. As a result of Mr. Booker's leaving, certain funds became available, and a Bureau of Infant Hygiene, under the directorship of Mrs. Kate Brew Vaughn, was organized late in 1918.

Perhaps the most outstanding feature of the health work during the year 1918 was the epidemic of influenza. The epidemic began early in October and caused in October alone 6,056 deaths; in November 2,133 deaths; and in December 1,497 deaths, a total during the last three months of 9,686 deaths.

The annual appropriation for the State Board of Health for 1918 was \$73,210.38.

The annual appropriation for the State Laboratory of Hygiene was \$12,500. The Laboratory, during this year, collected \$8,532.48 in fees for special work, so that the total income of the Laboratory for this year was \$21,032.48.

1919. The General Assembly passed the following important health legislation: chapter 71, entitled "An act to prevent the spread of disease from insanitary privies"; chapter 192, entitled "An act to provide for the physical examination and treatment of the school children of the State at regular intervals"; chapter 206, entitled "An act for the prevention of venereal diseases"; chapter 213, entitled "An act to require the provision of adequate sanitary equipment for public schools"; chapter 214, entitled "An act to obtain reports of persons infected with venereal diseases"; chapter 215, entitled "An act for the repression of prostitution"; and chapter 288, entitled "An act to amend chapter 671, Public Local Laws of 1913, relating to the injunction and abatement of certain nuisances."

The Bureau of Engineering and Inspection was organized in April. The engineering work of the Board had been suspended with the resignation of Mr. Warren H. Booker in September, 1918, Mr. Booker

having gone to France to engage in tuberculosis work under the direction of the Red Cross. Between September, 1918, and April, 1919, the engineering problems coming before the Board had been referred and very kindly and effectively taken care of by Col. J. L. Ludlow, of Winston-Salem. Mr. H. E. Miller, an engineer and a graduate of the University of Michigan, was placed in charge of the new bureau, and his brother, Dr. K. E. Miller, of the United States Public Health Service, was detailed by the Service to assist him in the organization of his work. Mr. H. E. Miller and Dr. K. E. Miller spent the spring and summer and a part of the fall in studying various types of privies, in preparing plans for the construction and maintenance of privies, and in preparing the necessary notices and literature to inform the people of the objects and requirements of the new privy law.

On May 1st Dr. A. J. Warren, health officer of Rowan County, was appointed to and accepted the position of Assistant Secretary of the Board.

On July 1st Mr. R. B. Wilson accepted the position of Director of Public Health Education.

On August 1st Dr. A. McR. Crouch, Director of the Bureau of Epidemiology, resigned to accept a position with the city of Wilmington. Dr. F. M. Register, whole-time health officer of Northampton County, succeeded Dr. Crouch as director of the bureau.

In September Dr. J. R. Gordon, Director of the Bureau of Vital Statistics since 1914, resigned on account of impaired health, and on October 1st the Bureau of Epidemiology and the Bureau of Vital Statistics were combined and placed under the direction of Dr. Register.

In September Mrs. Kate Brew Vaughn, Director of the Bureau of Infant Hygiene, resigned. The bureau was reorganized under an understanding with the American Red Cross and was enlarged to include, in addition to infant hygiene, the problem of public health nursing, the name of the bureau being changed to that of "Bureau of Public Health Nursing and Infant Hygiene." Under the agreement with the Red Cross this bureau was to have an available appropriation of \$12,000 a year, half of which was to be furnished by the American Red Cross and half by the State Board of Health. The personnel of the bureau and its plan of work, under the agreement, was made contingent upon the approval of both participating agencies, the American Red Cross and the State Board of Health. In December Miss Rose M. Ehrenfeld took charge of the new bureau and began its organization and work.

On October 1st Dr. Jas. A. Keiger, Director of the Bureau of Venereal Diseases, resigned and Dr. Millard Knowlton was appointed to succeed him.

The typhoid campaign, carried on during the summer through previous years, was continued in the summer of 1919, using third year medical students, furnished either with automobile or motorcycle for getting about. Campaigns were carried out in the following counties: Bertie, Cabarrus, Chatham, Chowan, Columbus, Craven, Hertford, Iredell, Johnston, Lincoln, Onslow, Pasquotank, Perquim-

ans, Randolph, Richmond, Rockingham, Stanly, Union, Warren, Wayne. A total of 49,076 were given complete vaccinations.

The educational work of the Board consisted of the publication of a 48,000 monthly edition of the Bulletin, and the distribution of about 350,000 pieces of public health literature.

The funds available during this fiscal year and their distribution are shown in the following tabulation:

<i>1919</i>	
<i>Receipts</i>	
Balance from preceding year.....	\$ 8,211.45
State appropriations	102,301.98
U. S. Interdepartmental Social Hygiene Board.....	27,084.95
U. S. Public Health Service.....	741.47
International Health Board.....	10,227.62
Counties	38,480.42
Bureau of the Census.....	3,531.57
License Fees.....	5,338.21
Miscellaneous	2,631.47
<hr/>	
Total	\$198,549.14
<i>Distribution</i>	
Executive Department.....	\$ 40,262.39
Bureau County Health Work.....	63,833.31
Bureau Engineering and Inspection.....	9,521.74
Bureau Epidemiology.....	18,811.01
Bureau Infant Hygiene.....	6,608.73
Bureau Medical Inspection of Schools.....	8,587.44
Bureau Venereal Diseases.....	33,809.08
Bureau Vital Statistics.....	17,115.44
<hr/>	
Total	\$198,549.14

The appropriation for the State Laboratory of Hygiene for this year was \$28,500; in addition to this, the Laboratory collected in fees for special work, for antitoxin, and in water taxes a total of \$14,344.02, making a total of \$42,844.02 available for work of Laboratory.

1920. During this year there was a Special Session of the General Assembly, lasting twenty days and held in the latter part of August. This Special Session passed an act amending the vital statistics law, making the fees for local registrars 50 cents instead of 25 cents for each certificate properly filed with the State Board of Health.

On January 1st Dr. B. E. Washburn, who had had general direction of the coöperative county health work and who had rendered most acceptable service, was recalled by the International Health Board and detailed to take charge of their interests in Jamaica. Dr. K. E. Miller, of the United States Public Health Service, who had been detailed in January, 1917, to organize a model county health department in Edgecombe County and then, in 1919, to assist his brother, Mr. H. E. Miller, in organizing the work of the new Bureau of Engineering and Inspection, to which was assigned the duty of enforcing the State-wide privy act, succeeded Dr. Washburn as Director of the Bureau of County Health Work.

In January a coöperative effort with the United States Public Health Service and the International Health Board to demonstrate the possibilities and advantages of the eradication of malaria from certain towns and cities in the eastern part of the State was begun. The terms of coöperation were that the International Health Board and the State Board of Health were to pay one-half of the expenses of the local work and the town or city in which the work was done the other half, the Public Health Service furnishing, as its part, expert supervising personnel. The towns and cities chosen for this work were Goldsboro, Farmville, and Greenville, the budgets for each municipality being, respectively: Goldsboro, \$13,670.98; Farmville, \$5,000; and Greenville, \$9,000, a total investment in this work of \$27,670.98. Mr. A. W. Fuchs, Associate Sanitary Engineer, was detailed by the Service to have supervision of the work.

In February, Dr. A. J. Warren, Assistant Secretary of the State Board of Health, resigned his position in order to accept the appointment of city health officer of Charlotte, North Carolina.

In the winter and spring of 1920, the North Carolina Landowners Association, under the progressive leadership of Mr. W. A. McGirt, of Wilmington, undertook a very extensive educational campaign against malaria, which was carried on through the public schools of thirty-eight counties in Eastern North Carolina. A series of county and State prizes for the best essay on malaria by public school children were offered as an inducement to the school children to interest and inform themselves, and, indirectly, their parents, with regard to the importance of this disease. To make possible this work by the school children 75,000 malaria catechisms, prepared by Dr. H. R. Carter, of the United States Public Health Service, were distributed through the public schools of the eastern part of the State to the school children. Thousands of essays were written, and it is reasonable to believe that the campaign was one of the most successful public health educational attempts yet undertaken.

In June it was found advisable to separate the Bureau of Epidemiology and the Bureau of Vital Statistics which had, on account of the scarcity of health officers, been placed under the directorship of a single bureau chief, Dr. F. M. Register. Dr. Register was appointed Director of the Bureau of Vital Statistics and Dr. J. S. Mitchener was appointed Director of the Bureau of Epidemiology.

In April the Interdepartmental Social Hygiene Board assigned to the State Board of Health several workers for making a study of vice conditions in North Carolina towns and cities and for taking such steps as were found expedient for decreasing prostitution. This group of workers was withdrawn in September, on account of differences developing between them and Dr. Knowlton, chief of the Bureau of Venereal Diseases, with the understanding that another group of workers would be assigned to this work at a later date.

In June arrangements were made with the United States Public Health Service and the American Social Hygiene Association for the development of an elaborate educational unit on sex hygiene and

venereal diseases designed to reach rural meetings through the use of picture films and a portable truck. An outfit consisting of several lecturers and a moving picture truck began work in Cumberland County in August, and from its very beginning met a most cordial reception and gave every promise of developing into one of the most useful agencies for dealing with the venereal disease problem.

During the year the antityphoid vaccination campaign was continued in Alamance, Bladen, Columbus, Duplin, Franklin, Gaston, Harnett, and Mecklenburg counties. Coöperative campaigns, in which the counties furnished the working personnel, were also carried on in Anson, Johnston and Rutherford counties. A total of 29,435 citizens have been vaccinated against the disease, and this does not include Columbus County, in which the work was just beginning when this report was completed.

The educational work of the State Board of Health during this year consisted of a 48,000 monthly edition of the State Board of Health *Bulletin* and the distribution of approximately 350,000 pieces of public health literature.

The funds available during this fiscal year and their distribution are shown in the following tabulation:

<i>1920</i>	
<i>Receipts</i>	
State Appropriations	\$176,152.61
U. S. Interdepartmental Social Hygiene Board.....	22,999.23
U. S. Public Health Service.....	2,824.00
International Health Board.....	17,512.16
American Red Cross.....	4,269.57
Counties	86,616.50
Bureau of the Census.....	3,550.35
License Fees	25,939.35
Miscellaneous	2,420.56
<hr/>	
Total	\$342,284.33
<i>Distribution</i>	
Executive Department	35,301.15
Bureau County Health Work.....	129,453.73
Bureau Engineering and Inspection.....	31,984.35
Bureau Epidemiology	16,887.29
Bureau Medical Inspection of Schools.....	57,094.03
Bureau Public Health Nursing and Infant Hygiene...	9,269.57
Bureau Venereal Diseases.....	46,701.84
Bureau Vital Statistics.....	15,592.37
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Total	\$342,284.33

The appropriation for the State Laboratory of Hygiene for this year was \$25,000; in addition to this, the Laboratory collected in fees for special work, for antitoxin, and in water taxes, a total of \$13,698.89, making a total of \$38,698.89 available for the work of the Laboratory. The above amount being insufficient, the Special Session of the Legislature authorized a loan of \$15,000 to enable the work of the Laboratory to be carried on, making a total of \$53,698.89 available for the work of the Laboratory during this year.

BUREAU
OF
ENGINEERING
AND
INSPECTION
ORGANIZED 1919

STATE
LABORATORY OF HYGIENE
ORGANIZED 1905

BUREAU
OF
VITAL
STATISTICS
ORGANIZED 1913

BUREAU
OF
VENEREAL
DISEASES
ORGANIZED 1918

BUREAU OF
INFANT HYGIENE
AND
PUBLIC HEALTH
NURSING
ORGANIZED 1918

BUREAU
OF
COUNTY
HEALTH WORK
ORGANIZED 1917

BUREAU
OF
TUBERCULOSIS
ORGANIZED 1914

BUREAU
OF
EPIDEMIOLOGY
ORGANIZED 1917

BUREAU
OF MEDICAL
INSPECTION
OF
SCHOOLS
ORGANIZED 1917

[STATE MEDICAL SOCIETY;
ELECTS FOUR MEMBERS]

STATE BOARD OF
SECRETARY AND
EXECUTIVE OFFICER

GOVERNOR
[APPOINTS FIVE MEMBERS]

ORGANIZATION CHART
OF THE
STATE BOARD OF HEALTH

NOTE: FOR DUTIES OF DIFFERENT ADMINISTRATIVE DIVISIONS, AS ABOVE INDICATED,
SEE SECTION OF BIENNIAL REPORT DEALING WITH DIVISION.

**PRESENT ORGANIZATION OF THE NORTH CAROLINA STATE BOARD
OF HEALTH**

The North Carolina State Board of Health consists of the Board proper and the executive staff.

The Board of Health, as indicated diagrammatically on page 22, consists of nine members, five of whom are appointed by the Governor and four of whom are elected by the North Carolina State Medical Society. The organization of this body embodies two important administrative principles: (1) stability of organization and permanency of policies; (2) partnership of State and the medical profession in the conservation of human life.

The stability of the organization of the Board of Health depends fundamentally upon the Board's freedom from political tinkering. The divorcement of the State Board of Health from polities depends largely upon the manner of selecting the members of the Board. Sudden and marked changes in the personnel of the Board under the present plan of organization are impossible: First, because the members of the Board of Health are appointed for terms of six years and their terms of service expire, not in the same year, but in different years. The appointment of new members of the Board is, therefore, gradual and not sudden. Second, the Board of Health is selected by two parties: one, the Governor, and the other, the State Medical Society. It is far less likely that two parties naming a Board would be dominated by political considerations than where one party names the Board. This division of the appointive and elective power and this provision for the gradual exercise of that power by two parties guarantee the State Board of Health against the sudden changes of personnel and policy associated with a purely political organization. The Board of Health is stable; its individual members come and go, but as an organized body it stays.

This stability of organization is the responsible factor for the permanency of policies adopted by the Board. Political boards elected or appointed for two years or four years are naturally inclined to adopt two and four-year policies, to attempt to make the best showing possible during the short term of their official life. Their administrative thoughts and plans are largely defined by the time limitations of their administration. This is not true of self-perpetuating bodies such as the Board of Health, that, as legally constituted, has no limit to its life.

The second administrative principle embodied in the organization of the State Board of Health is the recognition by the State of the fundamental relation of the medical profession to the work of prevention. The State recognizes (1) the debt of society to that profession by which nearly all of the experimentation and discovery on which disease prevention is based, with the exception of the work of Pasteur, was contributed; (2) the interest of organized medicine in the conservation of human life and the peculiar ability of organized medicine to advise the State as to the methods of prevention; and (3) the necessity of securing from the medical profession first information in regard to the occurrence of deaths and their causes, and the appearances of epidemics.

The executive staff of the State Board of Health may be divided into the executive office and the various bureaus or special divisions.

The Executive Office.—The executive officer of the State Board of Health should be a man with technical training and experience, and, therefore, should be selected on account of his technical rather than his political qualifications. It is, therefore, right that the Secretary of the State Board of Health, the executive officer, should be selected by a specially qualified committee, that is, the State Board of Health, and not elected in a general election, as would be the case if the office were a political one. The six-year term of office for which the Secretary is elected is in accordance with the idea of permanency of policies. The work of the executive office is detailed elsewhere.

The Bureaus or Special Divisions of the Executive Staff.—The work of the State Board of Health is large and varied, and is, therefore, apportioned among nine bureaus. These bureaus are each directed by an officer with special talent and training. The different bureaus and their more important problems are fully and clearly indicated in the diagram on page 22.

The Correlation of the Work of the Board.—This is also clearly indicated in the diagram on page 22. The division of the executive staff into special bureaus has the advantage of giving individualism to the work of each bureau and thereby creating a laudable pride and a healthy rivalry among the various bureaus engaged in the general work of the Board. While each bureau is separate and independent of other bureaus, as indicated in the diagram, the work of the entire executive staff is coördinated—the work of the Board being given compactness by the relation of the bureaus to one another through the executive office of the Board.

DEBITS AND CREDITS IN STATE HEALTH WORK

We assume that the people in North Carolina are interested especially in two things with respect to the work of the State Board of Health: (1) what the Board spends; (2) what it gets for the expenditure. This statement, therefore, will deal in a manner as brief as clearness permits with the debit and credit side of the State's account with public health.

DEBITS

During the biennial period of 1919-20 the average annual expenditure of the State Board of Health, including the Laboratory but not the Sanatorium, was \$202,592.80.

CREDITS

Cost Values

Item 1.—The work of the State Laboratory of Hygiene may be stated briefly and in the terms of its financial equivalents in the table as set forth below. That is to say, if there had been no State Laboratory of Hygiene in existence the work done would have cost the citizens of the State the amount shown in the table.

19,707 Wassermann and Gonorrhreal Fixation Tests @ \$5.00.....	\$ 98,535.00
4,910 Examinations of Water @ \$5.00.....	24,550.00
799 Examinations of Urine @ \$5.00.....	3,995.00
16,567 Other Examinations averaged @ \$2.50.....	41,417.50
755,135 Doses Typhoid Vaccine @ 50c.....	377,567.50
15,210 Doses Whooping Cough Vaccine @ 50c.....	7,605.00
179,815 Doses Smallpox Vaccine @ 15c.....	26,972.25

Diphtheria Antitoxin Distributed

6,525— 1,000 unit packages @ \$2.00.....	\$13,050.00
1,931— 3,000 unit packages @ \$3.50.....	6,758.50
8,245— 5,000 unit packages @ \$5.00.....	41,225.00
10,626—10,000 unit packages @ \$7.50.....	79,695.00
	<u>140,728.50</u>
668 Tetanus Antitoxin @ \$3.50.....	2,338.00
815 Pasteur Treatments Distributed (low estimate).....	16,300.00
	<u>18,638.00</u>
Total	\$740,008.75

Item 2.—The State Board of Health, through its officers, during the past two years has given complete antityphoid vaccinations to 165,000 citizens of the State. Without this activity of the Board this work would have cost our people \$2 per vaccination, a total of \$230,000. During the same time, through our officers and agents, 31,550 people have been vaccinated against smallpox, a piece of work which would have cost not less than \$30,000. The vaccinations, then, carried out under the direction of the Board of Health during the past two years would have cost \$260,000.

Item 3.—During the past two years, largely during the last 14 months, 28,000 open-back, disease-spreading, insanitary privies have been replaced either with closed sanitary privies or sewer connections. In the building of tens of thousands of sanitary privies throughout the rural South the experience of the International Health Board, largely interested and instrumental in this phase of sanitation, is that it costs about \$2.50 to reach and persuade the average rural resident to build a sanitary privy. Applying this cost figure

of \$2.50 to the privies built within the State during the last two years, this piece of work would have a financial equivalent of \$70,000.

Item 4.—During the last two years 25,587 public school children have been given dental treatment, 44,092 permanent fillings have been made, and the mouths of 9,000 other school children were examined and they and their parents given professional advice. This work, if done at prevailing dental rates, would have cost the parents of these children \$117,275.

Item 5.—During the last two years, largely during the last 14 months, 150,000 school children have been examined by their teachers in accordance with instructions from the Board of Health. Of these, 60,700 have been examined by school nurses, especially trained in this work and working under the direction of the State Board of Health; and of these, 2,500 have been operated on for diseased tonsils and adenoids at a cost to their parents of a little less than \$10. The ordinary price of these operations is \$35. The saving here to the citizens of the State on cost is \$62,500.

Item 6.—During the last two years 60,000 persons suffering from venereal diseases have been treated in clinics under the supervision of the State Board of Health. The cost of these treatments at regular rates would have been \$120,000.

Item 7.—The State Board of Health has succeeded in interesting other agencies, including the International Health Board, the Federal Government, the American Red Cross, the American Social Hygiene Association, and the counties of the State, to the extent of securing during the past two years \$11 from outside agencies for State health work for every \$17 the State appropriates, or in a gross sum, for health work additional to that provided for by the State appropriation, \$273,633.42.

In conclusion, the total saving in cost values alone to our people, as above stated (and this does not include many minor items which might have been given) amounts to \$1,580,908.42.

Vital Values

By the term "vital value" as distinguished from "cost value" we mean to indicate the value in earning capacity of health and life saved through such measures as those enumerated above. For example, the Laboratory work has a cost value to our people, that is, saves them, \$740,000 in work which the Laboratory does, and the vaccinations done by the State Board of Health and its agents have a cost value of \$260,000, but the number of days of sickness prevented, the deaths postponed, the increase both in quantity and quality of earning capacity, that is, the vital value, far exceeds the cost values. Another point which is not to be lost sight of here is that had not the State done this work most of the cost value and vital value could not be credited to the State—the work would not have been done.

Item 1.—The typhoid death rate in North Carolina in 1914, the first year in which deaths and their causes were recorded under the Vital Statistics Law in this State, was 35.8 per hundred thousand population. It is now, in 1920, 10.6. The significance of this reduction perhaps is more clearly appreciated by giving the number of deaths and number of cases per year since 1914. In 1914 there were 839 deaths and 8,390 cases; in 1915 there were 744 deaths and 7,440 cases; in 1916 there were 700 deaths and 7,000 cases; in 1917 (the year of mobilization when the general death rate and

special death rates for the entire country increased) there were 726 deaths and 7,260 cases; in 1918 there were 549 deaths and 5,490 cases; in 1919 there were 427 deaths and 4,270 cases; in 1920 there will be slightly less than 275 deaths and 2,750 cases. Here is a saving of 564 lives and the prevention of 5,640 cases of typhoid fever that would be occurring annually in this State, would have occurred this year, had the reduction in this disease since 1914 not been brought about. A minimum cost in physicians' bills, nursing, and druggists' bills and loss of productive labor for each case of typhoid fever is \$200. The prevention, therefore, of 5,640 cases means the saving of \$1,128,000. The earning capacity of the average person who dies from typhoid fever is \$2,000, and the saving, therefore, of 564 lives is equivalent to another \$1,128,000. The saving to the State on this one item alone amounts, therefore, to more than ten times the total cost of the health work of the State, that is, to \$2,256,000.

Item 2.—The death rate from diphtheria has been reduced during the last five years from 22.3 deaths per hundred thousand population to 9.5 deaths for the same population, or in actual figures, from 525 deaths to 242 deaths, a saving of 282 lives and the prevention of 3,300 cases of the disease. The cost in doctors', druggists', and nursing bills, and loss of time from labor for the average case of diphtheria is not less than \$25. The prevention, therefore, of 3,300 cases means the saving of \$72,500. The economic value of the 282 lives saved, on account of most of these being children, may be safely considered at not less than \$1,000 per capita, or a total saving of \$282,000, a grand total in the prevention of sickness and deaths from this disease of \$354,500.

Item 3.—A total of 52,472 cases of contagious diseases have been quarantined and reasonable restrictions placed about these foci of infection. If we assume that but ten per cent prevention has been effected this would mean the prevention of 5,246 cases of contagious disease and a saving of not less than 250 lives. Again giving the cost of the average case of these diseases prevented at the censurably low figure of \$25 and the economic value of the 250 lives saved at \$1,000 apiece, we have here another saving of \$281,150.

Item 4.—The death rate of North Carolina for 1919, the last figures available, was 12.4 deaths per thousand of the population. For the entire registration of the United States for the same year the rate was 12.9. During the last five years the death rate in North Carolina has been lower than that of any of the older states of the Union. The newer states in the West with a larger emigrant population from foreign countries and the older Eastern states and, therefore, with a larger proportion of the middle-aged healthy group and without the liabilities of a large infant or a large old-age population, have lower death rates than this State, but North Carolina's death rate is the lowest of any of the old states and the lowest of any known death rate on the Coast from Maine to Texas. This favorable index of the general health conditions in North Carolina is maintained notwithstanding an extensive prevalence of malaria and the milder types of hookworm disease and, what is much more important in its bearing upon the death rate, the highest birth rate of any state in the Union. The birth rate in North Carolina for the last five years has averaged about 31 births per thousand population, and promises in 1920 to reach 33 per thousand population. The average rate of the United States would probably not exceed 25 or 26 per thousand of the population. High birth rates, in contributing to a large infant

population, which age group has naturally a high mortality, tends to increase the death rate. This State, however, has the distinction of maintaining the highest birth rate and one of the lowest death rates. The fluctuation of death rate in North Carolina one point, that is, one less death or one more death per thousand of the population means 2,500 less deaths or that many more deaths per year, the population of the State being 2,500,000. As there are 700 days of sickness for each death a decrease in the general death rate of one per thousand would mean, in addition, the prevention of 1,750,000 days of illness, or the saving of 57,000 persons one month's illness during the year, or preventing the illness of 4,800 persons for an entire year. It seems a most reasonable assumption to say that the general effect of public health work in North Carolina amounts to at least the reduction of one death per thousand of the population and its coincident saving in time lost from sickness. This much human life, 2,500 whole lives saved, and 1,750,000 persons saved from a day's illness during the year, has if we take \$2,000 as the value in earning capacity of the average life saved and \$2 as the cost per day of sickness, losses in productive labor, cost of doctors, druggists, etc., a total value of \$8,500,000.

Intangible Values.

There are many important activities of the State Board of Health that cannot be reduced to terms in dollars and cents which express their value or indicate the essential part which they play in health work. As such, the following activities or items may be mentioned:

Item 1.—The Bureau of Vital Statistics during the past two years has supervised and directed the work of 1,419 local registrars; has kept in close touch through reports and correspondence with 2,500 physicians, 4,000 midwives and 600 casket dealers, that is, those concerned in a professional and business way with births and deaths; has recorded and classified, according to location, county, town and township, according to race, age, and according to 189 causes of deaths, 64,000 deaths and 153,000 births. This work has required a considerable and an experienced clerical force of 14 persons. The activity of this Bureau is indicated by the elaborate system of card indexing and tabulating necessary to keep the aforementioned data regarding deaths and births, and by the volume of correspondence of this Bureau, to-wit: 43,250 individual letters and 25,000 form letters. To know the natural increase of the population, how many people die each year, in what counties, towns, and townships they die, and from what causes of death, to know what deaths, with respect to causes, are on the increase and what are on the decrease, and how deaths from various causes are responding to public remedies—this information is as necessary to intelligent health work as bookkeeping is to a business. Moreover, such records have important legal value. Then there is the sentimental value for what it is worth of the State's permitting no baby to be born or no decrepit and humble citizen to depart without its taking official note and making permanent record of these two principal events in life, the beginning and the end.

Item 2.—During the past two years the State Board of Health has examined, passed upon with its approval or required certain alterations to be made in the plans and specifications for 73 public water supplies and sewerage systems. In doing this it has (1) protected the towns installing

these public utilities against financial waste resulting from the purchase or installation of imperfect work; and (2) it has safeguarded municipalities taking water supplies from streams against possible pollutions of sewerage discharge by municipalities either up the stream or on some tributary thereof. The saving in money and the saving in lives from this work is considerable, but to attempt to state it in definite terms would be nothing better than a mere guess.

Item 3.—A total of 5,000 expectant mothers and 6,000 mothers with infants, a total of 11,000 women, have been aided through a system of correspondence and with carefully prepared literature in protecting themselves and their unborn children against the dangers of pregnancy and labor, and advised as to the raising of their infants. The need of this work is indicated by the facts that every year 600 women die in childbirth in North Carolina, and that of the 33,000 deaths occurring annually in this State 11,000 are within the first five years of life.

Item 4.—The State Board of Health is now operating a county educational unit for informing our people on the subjects of the importance of chastity and its bearing on health and character and the dangers of venereal diseases. The unit equipment consists of a large one and one-half ton truck of the type used in France for similar purposes, and a staff of five persons: (1) a physician to visit the county where the campaign is to be carried on in anticipation of the truck, and to arrange the itinerary of showings and lectures, and through wide publicity to acquaint the people with the character of the undertaking and to encourage them to take advantage of the lectures and shows; (2) an expert mechanic, who drives the truck and operates the moving picture machine; (3) a male lecturer for white audiences; (4) a woman lecturer for women; and (5) a male colored physician to lecture to negroes. Seven moving picture films, accurate in their teaching and most entertaining in the way of presenting the subjects, are shown. During the three months that this outfit has been in operation 38,500 persons have seen it, a total of 12,000 persons per month or 400 per day. This work, though just beginning, will be continued during the next two years until all the people of North Carolina have been instructed by the visual method, films, on the importance of continence and the dangers of incontinence.

Item 5.—An educational campaign against preventable disease has been carried on during the last biennium to the following extent: (1) a 48,000 monthly edition of the Health Bulletin, which invites comparison with that of any other State or city, has been distributed on request to the people of the State. The general reputation of the Bulletin makes further comment on it unnecessary; (2) the distribution, on request, of 1,175,000 pamphlets and leaflets on various health subjects. This is equivalent to a daily distribution of 1,600 pieces of literature. This demand for information on the subject of health, together with a daily correspondence of 135 letters, more than anything else indicates the interest that the citizenship of this State has in the problem of health. The value of educational work cannot be stated in dollars and cents, any more than one may so estimate the value of the Bible, the work of the churches, the value of the public press or public schools.

In conclusion, we believe that the public health program of the State justifies itself when considered from a viewpoint of cost values, vital values, or intangible values. And perhaps the greatest of these values are the

intangible ones. The intangible values are more closely associated with and more a part of the immaterial than the material life; they are the imponderable and spiritual values, or the values of mind and impulse and motive and ideals; they cannot be transmuted into currency. We may measure increases in the quantity of life, decreased death rates and lessened sickness, but it is impossible to weigh the value of improvements in vital quality, and, after all, the State's interest, its ultimate object is not mere quantity of life, increase in the length of days of the average citizen, but a happier, more efficient citizenship, a higher and finer quality of life.

"We live in deeds, not years; in thoughts, not breaths;
In feelings, not in figures on a dial;
We should count time by heart throbs. He most lives
Who thinks most, feels the noblest, acts the best."

WORK OF THE EXECUTIVE OFFICE**Character of Work****DUTIES**

The duties of the executive office are: (1) to assume primary responsibility for the enforcement of the more important State health laws; (2) to consider and determine, with the advice and consent of the Board, what should be the more important public health policies of the State; (3) to secure the needed legislation that will make possible the adoption of desirable health policies; (4) to supervise and assist in the execution of established policies. More fully and analytically stated, the duties of the executive office are:

1. *Public Health Law Enforcement.*—The enforcement of law rests, in a general way and broadly, upon the judicial machinery of the State. On the other hand, it is not only the privilege but the duty of any citizen to see that the violation of any law is brought to the attention of the courts and dealt with. The more thorough understanding of the purposes and the character of the public health laws and the keener appreciation of their importance imposes in a special way upon the executive office of the State Board of Health the duty of seeing that these particular laws are fully complied with.

2. *Determination of Policies.*—The duty of considering and formulating for the action of the Board what should be the more important public health policies of the State rests largely with the executive office of the Board on account of its primary and general responsibility for the development of an effective program of human conservation.

3. *Obtaining Legislative Adoption of Policies.*—After the Board has considered and definitely decided upon a course of action it becomes the duty of the executive office to bring to the attention of the people the need of the course of action approved by the Board, and to so inform, interest, and appeal to the public, and reflexively and directly to the General Assembly as to secure legislative approval and provision for the public health policies which have been adopted by the State Board of Health.

4. *The Selection of an Executive Staff.*—The efficiency of any agency is conditioned largely upon the personnel who are employed in its activities. The responsibility of finding and securing persons properly qualified by native endowments, training and experience to direct the special bureaus or divisions entrusted with carrying out the established policies of the Board rests largely with the executive office.

5. *Supervision and Coördination of the Special Bureaus.*—As has been pointed out heretofore, the organization of the executive work of the Board embraces a number of special bureaus which are held responsible for some definite State health policy, and which are so organized as to be independent of each other. Naturally, these bureaus and divisions in the character of their work are closely related and some means of coördinating their activities is necessary, and this means the executive office supplies. In the development of new bureaus entrusted with recently adopted policies a considerable amount of supervision by the executive office is called for.

6. *Taking Care of the General Problems of the Board.*—The majority of

calls by letter or person upon the Board for service can be and are referred to the special bureaus of the Board concerned directly with the sort of service called for in the letter or by the visitor; however, there are a number of calls made on the Board for service that are general in character, or not yet provided for by some special agency, and these services, necessarily, have to be supplied by the executive office.

7. *The Educational Work of the Board.*—The interest and support of the people in public health is in proportion to their understanding of the problem. To reach the people, therefore, with information as to what the public health needs of the State are and how the Board proposes to meet the needs is, of all the Board's duties, the most fundamental and the most important; moreover, the educational work of the Board is of a general character, dealing with the interests of all the special bureaus or divisions and, therefore, belongs largely to the executive office; the interest of which is not particular but general with respect to health problems.

8. *Accounting.*—Receiving, disbursing and accounting for public monies is a duty that rests upon the executive office because of its primary and general responsibility for the interests of the Board.

METHODS

The methods of work which are followed depend largely upon the character of the duty which the executive office seeks to discharge. For this reason it is well in the discussion of methods to relate them to the special duties of the executive office as above set forth.

1. *Methods of Law Enforcement.*—Investigations as to violations of the more important public health laws of the State and the bringing of prosecutions where violations are found, are carried out largely as a part of the special activities of the bureaus of Vital Statistics, Epidemiology, and Inspection. These three Bureaus maintain a field force of inspectors which varies at different times, but which is equivalent to ten full-time officers. Law enforcement will, therefore, be more fully discussed in connection with the work of these special bureaus. The responsibility falls, however, to the executive office to see that the bureaus fearlessly and without discrimination enforce the important laws entrusted to their execution. The larger work of the executive office in law enforcement, however, concerns itself with bringing to public attention, more especially through the *Bulletin*, the principal State health laws and the need of their careful observance, and in this way, building up a public sentiment favorable to the observance of the public health laws and sympathetic with the judicial machinery in imposing penalties upon those who violate them.

2. *Methods for Determining Policy.*—In determining the public health policies of the State, it is necessary: (a) that the executive office secure information through special and regular reports on the vital statistics of the State, and in this way be fully cognizant at all times of the vital conditions of the State as shown by the State's birth rate, the State's general death rate, the State's special death rates for certain diseases, the death rates in the State by counties, by races, and by seasons; (b) that the executive office secure information, through public health literature, books, and periodicals, as to the more recent developments and discoveries in public health work; (c) that the executive office, by keeping in touch through conferences with other State health officers and Federal health officers, be thoroughly con-

versant with the methods and accomplishments of other state departments of health, and that the executive office be alert to those larger interstate movements, especially those related to action by the central government, in order that whenever and wherever possible these larger movements may be influenced to the advantage of the State.

3. *Methods for Securing Legislative Action.*—To secure the necessary measures and appropriations for the development of the State health policies, the following methods are pursued: (a) The people of the State are informed, through bulletins, exhibits, the press, and public addresses, as to vital conditions and as to necessary measures and appropriations for favorably influencing the vitality and physical efficiency of North Carolina people. In this way the executive office seeks to develop a favorable public sentiment for the development of its more important public health policies; (b) the executive office seeks to find and to interest certain individuals qualified by heart and head and position, for influencing, introducing, and supporting needed legislation.

4. *Methods for Selecting the Executive Staff.*—To find and secure, with the available means, a personnel for the bureau, division, or agency of the Board that is to be relied upon for carrying into successful execution some special and important public health policy, calls for (1) an acquaintance with those who are in touch with men qualified for such positions, and (2) a judgment of men. This judgment of men by which an administrative officer selects his assistants is, of course, basic in the success or failure of an administration.

5. *Methods for Supervising and Coördinating the Work of the Board.*—In giving assistance to members of the executive staff charged with carrying out certain special health policies, the executive office attempts to keep in touch with the work of each division or agency through regular monthly reports, special reports, and conferences from time to time. Consideration for the right amount of assistance—not too much and not too little—is regarded as important. Too much supervision tends to smother individuality, to stifle the pride of accomplishment, to break down the self-confidence of a bureau; while, on the other hand, too little supervision not infrequently results in a useless expenditure of funds.

6. *Methods for Caring for General Work of the Board.*—The general work of the Board is a matter largely of correspondence and conferences, the details of which are indicated in the following section of this statement on routine work. As will be observed in the detailed statement the general business of the Board consists of a very extensive correspondence, and a considerable amount of time devoted to conferences.

7. *Methods of Popular Education.*—For reaching the public with information on the health problem which they need, and which is necessary to secure their interest in and their support of the policies of the Board several means are in use. These include popular addresses, information through the press, the preparation and distribution of special pamphlets on the more important health problems and, last and most important of all, the publication of a 48,000 monthly edition of a regular *Bulletin*, or popular magazine. Popular addresses, on account of the high cost of railway and automobile transportation and hotel expenses, and more especially, on account of the small numbers reached, is, relatively speaking, too expensive a method for informing and interesting the people generally in the question of public

health. The tremendous demands, the multiple requests of various agencies, interested in some special propaganda, on the press, generous and sympathetic as the press unquestionably is, have overreached the capacity of the press to supply space for this sort of material or to furnish personnel to examine and discriminate between propaganda articles worthy and unworthy of newspaper attention, so that it is becoming more and more difficult to use the newspapers for popular health education. It is only just to state, however, in this connection, that our State press has been extremely partial to material sent out by the State Board of Health, and has so assisted in the health movement in North Carolina as to place this Board and the people generally under lasting obligations. The use of popular pamphlets on special subjects, like the pamphlets on typhoid fever, diphtheria, malaria, tuberculosis, sanitary privies, etc., which are supplied only on special request, affords perhaps the most economical means of popular public health education, for the reason that only those with some special interest receive the pamphlets and most of them are used. These pamphlets, however, would not be used, would remain in the office unasked for, were it not for other means, particularly the press and the *Bulletin*, for reaching the general population and informing them of the existence of these special pamphlets and their value. *The State Board of Health Bulletin*, founded shortly after the Board started, the *Bulletin* making its first appearance in 1886, has been steadily growing with the development of a more extensive popular interest in the health problem until, from an edition of a few hundred monthly Health Bulletins, it has now become one of the best known periodic publications existing in North Carolina, reaching 48,000 homes every month, and coming in contact with at least one-tenth of the population of the State. The *Bulletin* is by all odds the most important educational means which the State Board of Health has. It not only develops but it serves to maintain the public interest in the undertakings of the State for the conservation of human life and health.

8. *Methods of Accounting.*—The bookkeeping of the executive office is entrusted to a thoroughly reliable, careful, and bonded clerk, whose system of accounting has been devised by an expert accountant and whose work is audited at regular intervals.

ROUTINE WORK

The routine work of the executive office is shown in the following tabulation:

Letters received	18,197
Magazines and Bulletins received and reviewed.....	12,777
Letters written—Individual	9,365
—Multigraph	18,274
Total	27,369
Articles written—Newspaper (107)	words 39,400
—Bulletin (41)	words 53,150
—Official Publication (6)	words 89,000
—Special (8)	words 29,051
Forms and Placards Prepared (16).....	words 4,900
Telegrams Sent	707
Telegrams Received	564
Jail Reports Received and Examined (1919).....	85
Jail Score Cards Copied and Mailed (1919).....	45
Convict Camp Reports Received and Examined (1919).....	98
Convict Camp Score Cards Copied and Mailed (1919).....	23

State Institution Inspection Reports Copied and Mailed (1919).....	68
Hotel Certificates Copied and Mailed (1919).....	37
Hotel Certificates Mailed (1919).....	118
Vouchers Issued.....	4,939
Sanatorium Vouchers Examined and Mailed.....	2,153
Receipts Issued	569
Financial Reports Prepared.....	137
Miscellaneous Reports Prepared.....	34
Multigraph Forms and Letters Executed for Various Bureaus.....	311
Number of Pieces.....	334,477
Requisitions for Printing.....	506
Number of Pieces.....	5,808,379
Pamphlets, Leaflets and Placards Distributed.....	668,187
Monthly Health Bulletins Mailed.....	1,152,000
Hours Spent in Conference.....	326½
Days Out of Office on Official Business.....	204¾

MONTHLY AVERAGE

Letters Received	758
Magazines and Bulletins Received and Reviewed.....	532
Letters written—Individual	390
—Multigraph	761
Total	1,151
Articles written—Newspaper (4)	words 1,641
—Bulletin (2)	words 2,214
—Official Publication (1 in 4 mos.)	words 3,631
—Special (1 in 3 mos.)	words 400
Forms and Placards Prepared.....	29
Telegrams Sent	24
Telegrams Received	7
Jail Reports Received and Examined (1919).....	4
Jail Score Cards Copied and Mailed (1919).....	8
Convict Camp Reports Received and Examined (1919).....	2
Convict Camp Score Cards Copied and Mailed (1919).....	6
State Institution Inspection Reports Copied and Mailed (1919).....	3
Hotel Score Cards Copied and Mailed (1919).....	10
Hotel Certificates Mailed (1919).....	206
Vouchers Issued	90
Sanatorium Vouchers Examined and Mailed.....	23
Receipts Issued	6
Financial Reports Prepared.....	2
Miscellaneous Reports Prepared.....	13
Multigraph Forms and Letters Executed for Various Bureaus.....	13,936
Number of Pieces.....	21
Requisitions for Printing.....	242,016
Number of Pieces.....	27,841
Pamphlets, Leaflets and Placards Distributed.....	48,000
Monthly Health Bulletins Mailed.....	14
Hours Spent in Conference.....	8
Days Out of Office on Official Business.....	

RESULTS OBTAINED

Organization of Bureaus.—(1) The executive office planned in general, not in detail, and assisted in inaugurating the work of the Bureau of Engineering and Inspection. This work of this bureau is largely in the nature of a pioneer undertaking, no other state in the Union having, by state enactment, attempted to regulate the privy problem by prescribing the construction and manner of maintaining privies. The work of this bureau involved the study of all existing types of family toilet arrangement, with the selection of those types best suited to the economic, educational, climatic,

and geographic conditions existing in this State. The work of organizing this bureau included, further, the drafting of proper rules and regulations for the maintenance of closets and the employment and training of a corps of ten sanitary inspectors for giving the law effect. The work accomplished during the last two years is stated clearly and concisely in another section of this report.

(2) During the last two years it became necessary, on account of the desire of the Red Cross to participate in the public health work of the State and on account of the resignation of Mrs. Kate Brew Vaughn, Director of the Bureau of Infant Hygiene, to reorganize that bureau and to enlarge the scope of its activities so as to include public health nursing. The executive office had to give considerable time in arranging the terms of coöperation with the Red Cross and to the reorganization of the bureau. The work of this bureau is also fully stated in another section of this report.

(3) After eighteen months experience it was found that the Bureau of Venereal Diseases, which had followed a plan of work originally suggested and outlined by the Bureau of Venereal Diseases of the United States Public Health Service, and which plan was conceived for cities and was suitable to a State with a large urban population, should be considerably reorganized in such a way as to make it reach more effectively our large rural population. The general plan of attack on venereal diseases as promulgated by the Federal authorities consisted largely in the maintenance of public dispensaries in cities of 10,000 population and over. Along with this dispensary plan of attack on venereal disease, an extensive educational campaign, carried out through bulletins and special pamphlets, had been under way. Recognizing the inadequacy of the dispensary plan for reaching rural people, the executive office succeeded in interesting and in gaining the coöperation and financial participation of the American Social Hygiene Association and the Bureau of Venereal Diseases of the United States Public Health Service in an intensive educational plan for the rural sections of the State. The revised plan included the use of a large truck, electrically equipped, moving picture outfit, exceptionally entertaining and instructive films on venereal diseases, and a competent corps of lecturers for reaching all the people, urban and rural, including the remote country districts. This effort is another pioneer undertaking, this being the first carefully considered attempt to reach in a large way the rural sections with the campaign against venereal diseases. At this time this work has been carried on in Cumberland, Harnett, and Robeson counties, and many reports from those counties are convincing that this rural educational unit, organized as a part of the Bureau of Venereal Diseases, will prove a decidedly successful undertaking.

Maintenance of Personnel.—The high cost of living, the depreciation of the purchasing power of the dollar, have made it very difficult during the past two years to maintain efficient men in salaried positions. This difficulty has been augmented by the fact that for the last six or eight years there has been a decreasing output by the medical colleges of medical graduates and the fees charged in medical practice have been advanced, the practice of medicine thereby having become more remunerative than heretofore. As a result of these economic conditions we lost from the executive staff within the last biennium the following officers, who resigned their positions with us to accept positions of greater remuneration elsewhere: Dr. A. McRae Crouch, Mrs. Kate Brew Vaughn, Dr. Jas. A. Keiger and Dr. A. J. Warren.

In addition to the above resignations, Dr. J. R. Gordon resigned as Director of the Bureau of Vital Statistics on account of impaired health, and Dr. B. E. Washburn, who was loaned by the International Health Board, was withdrawn for assignment to work in Jamaica. To fill these vacancies Dr. F. M. Register has succeeded Dr. Gordon as Director of the Bureau of Vital Statistics; Dr. J. S. Mitchener has succeeded Dr. Crouch as Director of the Bureau of Epidemiology; Miss Rose M. Ehrenfeld has replaced Mrs. Vaughn in charge of the Bureau of Public Health Nursing and Infant Hygiene; Dr. Millard Knowlton has taken over the work of Dr. Keiger as Director of the Bureau of Venereal Diseases, and Dr. K. E. Miller was detailed by the Public Health Service to assist the State in the development of its county health work and to replace Dr. Washburn. Mr. H. E. Miller, C. E., was appointed early in 1919 as Director of the Bureau of Engineering and Inspection. The significant fact in this statement of changes in personnel is this: that of seven bureaus represented in the general work of the Board there is now only one of the bureau directors, Dr. George M. Cooper, who has been with the Board as long as two years. It is respectfully submitted that any business with a labor turnover similar to that which the executive staff has sustained within the last two years would be in serious danger of bankruptcy. One of the most difficult results which the executive office is to be credited with has been to maintain a working staff under the conditions mentioned, and it may be said without fear of contradiction that notwithstanding these conditions, the present staff is as efficient as the staff has been at any past time, and will be better appreciated when compared with similar organizations in other states.

Securing Valuable Outside Coöperation and Financial Assistance.—The executive office has succeeded in interesting and securing the financial participation, during the past two years, of the International Health Board, the United States Public Health Service, the Interdepartmental Social Hygiene Board, the American Red Cross, and the American Social Hygiene Association. During this biennial period these agencies have contributed to health work in North Carolina a total of \$273,633.42, while the State expended a total of \$278,454.59—an expenditure from the coöperating agencies of dollar for dollar with the State.

Participating in the Direction of the Larger Volunteer Health Movements.—During the past year the executive officer of the Board, as a recognition of the part that this State was taking in dealing with the public health problem, was elected President of the American Public Health Association. Any position with the opportunity for participating in and influencing national health movements which concern the State in many ways, especially through Federal legislation and channels of influence for reaching the masses of the people, is not without direct value to our people. As President of the American Public Health Association the executive officer of the Board has necessarily had to give a great deal of time to these larger outside interests; moreover, it could be easily shown if details were in order, that the time spent in this outside work is more than justified by benefits to the health work of our own State.

The Educational Work of the Board.—The executive office assumes charge and directs the large educational activities of the Board of Health. During the year 1919 this work included the issuance of a 48,000 edition of the monthly Health Bulletin, the preparation, printing and distribution of

375,380 pamphlets on special subjects. For the year 1920, the monthly edition of the *Bulletin* of 48,000 copies was continued and 292,807 pamphlets on special subjects were supplied the people. In addition to the above educational activities of the Board 62,412 pamphlets on social hygiene and venereal diseases were distributed in 1919, and in 1920 this class of educational material rose to 444,367 pamphlets. This piece of work, as has been suggested elsewhere, is the most important of all the work of the Board, for all else depends upon the interest and intelligent coöperation of the people with the public health officials, and such interest and coöperation is secured, at least 90 per cent of it, through the educational work of the executive office.

Accounting.—During 1919 the executive office received \$198,549.14 and disbursed \$191,630.47, 2,285 checks having been issued. During the last year these figures were: Total receipts from all sources, \$342,284.33; disbursements, \$362,365.62. Total number of checks written, 2,633. Funds are received from many sources, including the State Treasury, International Health Board, American Red Cross, United States Public Health Service, Interdepartmental Social Hygiene Board, Bureau of the Census, and some thirty or forty counties, and fees from sanitary inspectors of privies. An elaborate double entry system of books is necessary. In reporting upon a recent audit of the books a certified accountant, among other things says:

"I certify without hesitation that I do not believe there is a more complete set of books or a more efficient bookkeeper in any State Department."

Routine Work of the Office.—The executive office has handled an official correspondence during the last two years amounting to the receipt of 18,197 letters and 9,365 replies. This does not include 18,274 multigraph letters. In addition to this correspondence the executive officer spends 25 per cent of his time in conferences with persons coming to the Board on official business. The executive officer of the Board spent 79 days on official work out of the office in 1919, and 102 days out of the office in 1920.

REPORT OF BUREAU OF COUNTY HEALTH WORK**Character of Work**

Objectives.—Formerly the objectives of this Bureau have been to demonstrate to the public the benefits derived from the modern, systematic health department whose entire time is devoted to the control and eradication of unnecessary or preventable sickness, and to stimulate counties to undertake work of this kind. These objectives are now outgrown and out of date. The thinking public is now thoroughly aroused to the needs and benefits of full-time county health administration. Within the past year the number of counties embracing the opportunities offered by the State Board of Health has been exactly doubled, and at the present moment there are half as many more that are seeking coöperative assistance as soon as it becomes available. On October 1, 1920, this Bureau was forced to suspend further offer of assistance to interested counties due to exhaustion of funds for this purpose. Our present problem, therefore, is not to induce counties to invest in protective public health measures, but to meet their demands for assistance and guidance in this service.

The second objective of this Bureau is to amplify and perfect the work inaugurated in each county unit. The financial assistance which we offer makes it possible to purchase service in greater quantity and of better quality than would otherwise be possible or practicable by the county. And the administrative supervision and counsel which the Bureau extends to all coöoperating counties results in the elimination of much waste energy and lost motion, and protects the counties against incompetence and inefficiency.

Methods.—In each instance a contract coextensive with the calendar year is entered into by the county and State Board of Health. The contract is based upon a certain fixed plan of work prepared by the State Board of Health. Among other things, this plan of work outlines the scope of work to be accomplished. For convenience the various items of work are grouped into so-called health units as follows.

1. Educational Unit. Health Education, which is fundamental to all health progress, is pursued by this unit through public lectures, newspaper articles, handbills, posters, demonstrations at fairs, distribution of public health literature, and any other means contributory to the purpose in view.

2. Quarantine Unit. In accordance with the State Quarantine Regulations this unit exercises control over such diseases as the following: measles, whooping cough, diphtheria, scarlet fever, septic sore throat, roseola or German measles, chickenpox, cerebro-spinal meningitis, infantile paralysis.

3. County Dependents Unit. In the conduct of this unit the health officer becomes responsible for medical attention to the inmates of the county home, the jail, and the convict camp, and for the sanitary management of these institutions.

4. Dispensary Unit. Under this head is included free administration of vaccines of established value such as are employed for the prevention of typhoid fever, smallpox, whooping cough, and diphtheria, and the examination and treatment for hookworm.

5. (See note a) Soil Pollution Unit. Through the installation of sanitary privies, this unit is employed for the eradication of typhoid fever, hookworm disease, infant diarrhea and dysenteries. Other sanitary measures, such as

improvement of water supplies and elimination of mosquito breeding places are also pursued under this head.

6. Life Extension Unit. Has to do with the group of degeneration diseases which commonly make their appearance in persons about the middle age, such as heart disease, kidney disease, hardening of the arteries, cancer, and the like. By physical examination the health officer is able to detect the early signs of such diseases, and is enabled to place the affected persons in the hands of a practicing physician while there is yet time to avert disaster.

7. School Unit. Comprises the medical inspection of school children, which in conjunction with the Bureau of Medical Inspection of Schools, enables all children burdened by the common defects such as bad teeth and diseased tonsils and adenoids, to be free from these destructive influences and to reach the normal state of strength and development both in mind and body. By this service also various other removable defects are brought to the attention of the parents who are urged and assisted to procure the necessary medical treatment. In accordance with the state law also the health officer makes a physical examination of the school teachers to eliminate any who might be a menace to the children on account of tuberculosis.

8. (See note b) Infant Hygiene Unit. The most critical period of human existence is that embraced by the first two years of life. A very large portion of the death rate for this period is not only preventable, but easily preventable by the application of well established principles of infant hygiene. In other words, ignorance and neglect are solely responsible for an astonishing proportion of deaths under two years of age. For this reason the most fruitful opportunity for life saving through efforts of the health department is offered by this period of life. The principal causes of death and life-long damage among children under two years are, infant diarrhea, various nutritional disorders, so-called "stillbirths" and gonorrheal blindness. These conditions are very largely eliminated by advice and demonstration to mothers, and control of the activities of midwives.

9. (See note b) Tuberculosis Unit. The great white plague used to be considered hopeless, but now we know it to be to a certain extent both curable and preventable. The work of this unit is, therefore, twofold. (1) To teach the patient and his family how to overcome the disease and regain health, and (2) to teach and demonstrate how the disease may be avoided by those not affected. The latter function is much more important from a public health standpoint.

Notes: (a) Unit No. 5 is pursued intensively only when there is a sanitary inspector attached to the force.

(b) Units Nos. 8 and 9 belong primarily in the field of the public health nurse.

BUDGETS

In addition to outlining the scope of work and the duties of various employees, the contract between the State Board of Health and the county prescribes budget items, which are grouped into four different plans, as follows:

BUDGET PLANS IN ACCORDANCE WITH THE NORTH CAROLINA PLAN OF COÖPERATIVE COUNTY HEALTH WORK

		Salary Health Officer	Travel Health Officer	Salary Off. Asst.	Contingent Fund	Sanitary Inspector	Nurse	Total Budget
Plan	1st year	\$2700	\$ 600	\$ 600	\$ 900	\$-----	\$-----	\$ 4800
	2nd year	3000	600	600	900	-----	-----	5100
Plan	1st year	2700	600	600	900	1800	-----	6600
	2nd year	3000	600	600	900	1800	-----	6900
Plan	1st year	2700	600	600	900	-----	2100	6900
	2nd year	3000	600	600	900	-----	2100	7200
Plan	1st year	2700	600	600	900	1800	2100	8700
	2nd year	3000	600	600	900	1800	2100	9000

PARTICIPATING AGENCIES

County	State	Internat'l Health Board	Red Cross (A. R. C.)
\$ 3800	\$ 1000	\$-----	\$-----
4100	1000	-----	-----
4600	1000	1000	-----
4900	1000	1000	-----
3800	1000	-----	2100
4100	1000	-----	2100
4600	1000	1000	2100
4900	1000	1000	2100

At the present time one of the above budget plans is employed in each of the coöperating counties except Granville, which is completing a two years contract under a budget shown on the next page.

By this arrangement the county has a choice of budgets ranging from \$4800 to \$9,000 per year, or any other amount in addition that it may be its pleasure to provide.

Up to the early part of 1920 the following counties were operating under a three year contract which provided the following budget:

	First Year	Second Year	Third Year
Health Officer—Salary	\$2,100	\$2,100	\$2,400
Traveling	600	600	750
Clerical Assistant—Salary.....	600	600	900
Fixtures and Supplies.....	500	100	100
Contingent Fund	140	140	140
Soil Pollution Unit.....	2,430	900	900
Quarantine and Disinfection.....	100	100	100
School Work Unit.....	500	500	500
Life Extension Unit.....
Infant Hygiene Unit.....	100
	<hr/>	<hr/>	<hr/>
	\$6,970	\$5,440	\$5,890

Wilson, Davidson, Northampton, Lenoir, Pitt, Rowan, Forsyth, Robeson, Halifax.

Surry and Granville counties were each organized during 1919 on a two-year budget, and Edgecombe and Cumberland on one year budgets, as follows:

SURRY, SEPTEMBER 1, 1919 TO JULY 1, 1920.

Health Officer—Salary.....	\$2,100
Travel—Health Officer	600
Salary—Office Assistant	600
Fixtures and Supplies.....	200
Contingent Fund	250
Life Extension Unit.....	150
Infant Hygiene Unit.....	100
	<hr/>
	\$4,000

GRANVILLE, SEPTEMBER 1, 1919 TO SEPTEMBER 1, 1920

Health Officer—Salary	\$2,400
Travel—Health Officer	600
Salary—Clerical Assistant	600
Fixtures and Supplies.....	200
Contingent Fund	250
Life Extension Unit.....	150
Infant Hygiene	100
	<hr/>
	\$4,300

EDGECOMBE, APRIL, 1919 TO APRIL, 1920.

Salary of Health Officer.....	\$2,100
Travel of Health Officer.....	600
Salary of Nurse	1,500
Travel—Nurse	500
Microscopist	600
Fixtures and Supplies.....	200
Contingent Fund	350
Life Extension Unit.....	150
	<hr/>
Total	\$6,000

CUMBERLAND, JULY 1, 1919 TO JUNE 30, 1920.

Salary of Health Officer.....	\$2,600
Travel of Health Officer.....	600
Salary of Nurse.....	1,400
Travel of Nurse.....	600
Microscopist	600
Fixtures and Supplies.....	300
Office Rent	300
Contingent Fund	350
Life Extension Unit.....	150
Bacteriologist—Inspector	1,800
Community Nurse	300
Total	\$9,000

County	Period covered in this Report	Duration Months	Present Budget (1)	S. B. H. Funds Employed
Wilson.....	Dec. 1, 1918—Nov. 30, 1920.....	24	\$11100.00	\$ 1000.00
Davidson.....	Dec. 1, 1918—Nov. 30, 1920.....	24	9600.00	1000.00
Northampton.....	Dec. 1, 1918—Nov. 30, 1920.....	24	8700.00	1000.00
Lenoir.....	Dec. 1, 1918—Nov. 30, 1920.....	22	9400.00	1000.00
Pitt.....	Dec. 1, 1918—Nov. 30, 1920.....	24	8100.00	1000.00
Rowan.....	Dec. 1, 1918—Nov. 30, 1920.....	24	10200.00	1000.00
Forsyth	Dec. 1, 1918—Nov. 30, 1920.....	24	9200.00	1000.00
Robeson.....	Dec. 1, 1918—Nov. 30, 1920.....	24	9600.00	1000.00
Halifax.....	Sept. 1, 1919—Nov. 30, 1920.....	15	8700.00	1000.00
Edgecombe	April 1, 1919—Nov. 30, 1920	19½	9700.00	1000.00
Cumberland	July 1, 1919—Nov. 30, 1920	17	11500.00	1000.00
Surry	Sept. 1, 1919—Nov. 30, 1920.....	15	9300.00	1000.00
Granville.....	Sept. 1, 1919—Nov. 30, 1920.....	15	4300.00	1000.00
Beaufort.....	March 1, 1920—Nov. 30, 1920	9	8700.00	1000.00
Bertie	March 1, 1920—Nov. 30, 1920	9	4600.00	1000.00
Wake.....	July 1, 1920—Nov. 30, 1920	5	24100.00	1000.00
Vance.....	April 15, 1920—Nov. 30, 1920	7½	5100.00	1000.00
Wayne.....	Sept. 1, 1920—Nov. 30, 1920	3	6700.00	1000.00
Chatham	Sept. 1, 1920—Nov. 30, 1920	3	4800.00	1000.00
Wilkes.....	Oct. 1, 1920—Nov. 30, 1920.....	2	4000.00	1000.00
Totals.....		310	177,400.00	20,000.00

(1) Budgets as given include funds from the following sources:

- (a) State Board of Health. (S. B. H.)
- (b) International Health Board. (I. H. B.)
- (c) U. S. Public Health Service. (U. S. P. H. S.)
- (d) Local Red Cross Chapters. (A. R. C.)
- (e) County Funds Covered by Contract.
- (f) Bonus Salaries in addition to the Contract Salary paid to Health Officers by the Counties.

EXPENDITURES FOR COOPERA

Biennium

1918-1919

County	S. H. B.	I. H. B.	U. S. P. H. S.	County	Total
Nash	\$ 818.73	\$ 818.73	\$.....	\$ 3008.34	\$ 4645.80
Wilson	956.11	956.11	-----	3696.49	5608.71
Davidson	941.47	941.47	-----	3744.52	5627.46
Northampton	970.60	970.60	-----	3648.44	5589.64
Lenoir	985.40	985.40	-----	3700.00	5671.20
Pitt	1088.00	1088.00	-----	3264.00	5440.00
Rowan	1142.55	1142.55	-----	3382.36	5667.46
Forsyth	1142.55	1142.55	-----	3382.36	5667.46
Robeson	1088.00	1088.00	-----	3264.00	5440.00
Halifax	290.42	290.42	-----	580.83	1161.67
Edgecombe	937.50	-----	937.50	1875.00	3750.00
Cumberland	625.00	-----	625.00	2500.00	3750.00
Surry	250.00	-----	-----	750.00	1000.00
Granville	250.00	-----	-----	825.00	1075.00
Beaufort	-----	-----	-----	-----	-----
Bertie	-----	-----	-----	-----	-----
Wake	-----	-----	-----	-----	-----
Vance	-----	-----	-----	-----	-----
Wayne	-----	-----	-----	-----	-----
Chatham	-----	-----	-----	-----	-----
Wilkes	-----	-----	-----	-----	-----
Totals	11486.33	9423.83	1562.50	37621.74	60094.40

Fiscal Year 1918-1919	Fiscal Year 1919-1920
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Contributed by Coöperating Agencies, exclusive of

A. R. C.	\$48,608.07	\$98,615.79
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Contributed by Coöperating Agencies, including

A. R. C.	48,608.07	116,153.27
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S. B. H. Funds....	11,486.33	16,464.18
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Ratio S. B. H. Funds to others, exclusive of A. R. C....	1 to 4.23	1 to 6
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Ratio S. B. H. Funds to others, including A. R. C....	1 to 4.23	1 to 7
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TIVE COUNTY HEALTH WORK

1918-1920

1918-1920

S. B. H.	I. H. B.	U. S. P. H. S.	County	Total	A. R. C.	Total Including A. R. C.
\$-----	\$-----	\$-----	\$-----	\$-----	\$-----	\$-----
967.02	967.02	-----	6676.65	8610.69	1837.50	10448.19
956.03	956.03	-----	5319.58	7231.64	-----	7231.64
934.02	934.02	-----	4594.39	6462.43	-----	646 .43
934.02	934.02	-----	5079.39	6947.43	1575.00	8522.43
956.03	956.03	-----	4902.91	6814.97	-----	6814.97
985.34	985.34	-----	6223.49	8194.17	1250.00	9444.17
985.34	985.34	-----	4890.16	6860.84	1750.00	860.84
956.03	956.03	-----	5319.58	7231.64	1750.00	8981.64
1123.75	1123.75	-----	4957.08	7204.58	1750.00	8950.58
1166.67	666.67	1166.67	4066.67	7066.68	2100.00	9166.68
1291.67	416.67	1291.67	6000.00	9000.01	2100.00	1110 .01
1000.00	416.67	-----	3916.67	5333.33	875.00	6208.33
1000.00	-----	-----	3300.00	4300.00	-----	4300.00
749.97	749.97	-----	3450.00	4949.94	1575.00	6524.94
749.97	-----	-----	2700.00	3449.97	-----	3449.97
416.67	416.67	-----	8333. 3	9166.67	875.00	10041.67
624.98	-----	-----	2623.33	3188.31	-----	3188.31
250.00	-----	-----	950.00	1200.00	-----	1200.00
250.00	-----	-----	950.00	1200.00	-----	1200.00
166.67	-----	-----	500.00	666.67	-----	666.67
16464.18	11464.23	2458.34	84693.22	115079.97	17537.50	132617.47

REPORT OF THE CENTRAL OFFICE

Letters Received	3,844
Letters Sent Out:	
Typewritten	4,045
Mimeographed	8,451
Packages of Literature Sent Out.....	1,567
Telegrams Sent	153
Articles Prepared for Publication.....	121
Forms Prepared	25
Public Addresses	12
Visits to Counties.....	121
Days Out of Office on Duty with Counties.....	207

TABULATION OF REPORTS FROM COUNTIES
Biennium 1918-1920

(TOTAL OF 310 MONTHS OF WORK)

Educational Unit.

1. Public Meetings Held.....	1,813
2. Attendance	172,110
3. Letters Sent Out.....	70,966
4. Articles on Public Health Matters Contributed to Press.....	3,739

Soil Pollution Unit—Sanitary:

1. Sanitary Privies Built.....	15,633
2. Sewer Connections Obtained.....	920
3. Specimens of Stools Examined for Hookworm.....	6,267
4. Persons Treated for Hookworm.....	2,176

Communicable Diseases Unit—Quarantine Unit:

(a) Quarantinable Diseases:	
Total Number of Cases Quarantined.....	8,277
1. Whooping Cough	3,666
2. Measles	1,752
3. German Measles	78
4. Diphtheria	1,520
5. Septic Sore Throat.....	94
6. Cerebro-spinal Meningitis	19
7. Scarlet Fever	443
8. Chickenpox	704
(b) Diseases Controlled by Methods other than Quarantine:	
1. Typhoid Fever	805
2. Paratyphoid	36
3. Smallpox	1,137
4. Influenza	4,013
5. Other Communicable Disease.....	1,137
Total	7,137

County Dependents Unit:

1. Visits to County Jails.....	1,094
2. Visits to Convict Camps.....	356
3. Visits to County Home.....	618
4. Visits to Other County Institutions.....	386
5. County Patients Treated.....	1,232
6. Lunacy Examinations	163
7. Post Mortem Examinations.....	4

Life Extension Unit:

1. Life Extension Applications Received.....	3,690
2. Life Extension Examinations Made.....	4,281
3. Other Physical Examinations.....	1,083

School Unit:

1. Schools Visited	2,028
2. School Children Examined by Health Officer.....	23,121
3. School Children Examined by Teachers.....	17,201
4. Children having Defects Corrected.....	8,119

Dispensary Unit:

1. Vaccinations—Typhoid	77,244
2. Vaccinations—Smallpox	32,502
3. Vaccinations—Whooping Cough	504
4. Vaccinations—Diphtheria	155

Miscellaneous:

1. Hotel and Restaurant Inspections.....	18,040
2. Dairy Inspections	583
3. Milk Examinations (Bacteriological).....	142

NOTE.—The above report does not include the work done by the Public Health Nurses. These items will be found in the report of the Bureau of Public Health Nursing.

AVERAGE MONTH'S WORK OF THE AVERAGE COUNTY

(Derived by dividing figures in combined Biennial Report by 310, total number of months worked by all counties.)

1. Public Meetings	6
2. Attendance	555
3. Letters Sent Out.....	229
4. Newspaper Articles Contributed.....	12
5. Sanitary Privies Built.....	50
6. Sewer Connections Made.....	3
7. Hookworm Specimens Examined.....	20
8. Persons Treated for Hookworm.....	7
9. Contagious Diseases Quarantined.....	27
10. Contagious Diseases Controlled by Other Methods.....	23
11. Life Extension Applications Received.....	12
12. Life Extensions Examinations Made.....	14
13. Other Physical Examinations.....	3
14. Persons Vaccinated against Typhoid.....	249
15. Persons Vaccinated against Smallpox.....	105
16. Persons Vaccinated against other Diseases.....	2
17. Schools Visited	7
18. School Children Examined by Health Officer.....	74
19. School Children Examined by Teacher.....	55
20. Children Relieved of Physical Defects.....	26
21. Visits to County Jail.....	3
22. Visits to Convict Camp.....	1
23. Visits to County Home.....	2
24. County Patients Treated.....	4
25. Hotel and Restaurant Inspections.....	58
26. Dairy Inspections	2

NOTE.—The above includes only the principal items of the Health Officers' work. A great variety of less important functions must be omitted, as they are difficult to reduce to figures.

The work set forth in the foregoing report has an economic value to the State which, though somewhat intangible, is nevertheless vast and real. The assignment of reasonable and conservative economic values to items of public health work, however, is nearer to a solution than might be expected. With regard to certain items experience has demonstrated to a degree of certainty both the cost and the market value. In other instances we are enabled by statistical studies to estimate fairly accurately the hazard to life when certain communicable diseases are subjected to public health control as compared to a like hazard when no public health measures are employed. Upon these and other principles the Secretary of the State Board of Health in his annual report for April 1, 1919, to April 1, 1920, pages 3 to 5, has deduced certain financial values which seem to be open to little chance for criticism. These values are herewith applied to certain of the more important items of the foregoing report of work done in the coöperating counties.

1. Public meetings, 1,813; attendance, 172,110, at 10 cents per capita.	\$17,211.00
2. Newspaper articles supplied, 3,739. On the basis of 500 words per article, and 1 cent per word, this would place each article at \$5.00. Total value.....	18,695.00
3. Sanitary privies built, 15,633, at \$5.00 each.....	78,165.00
4. Sewer connections, 920. These certainly have equal or greater public health value than sanitary privies. They are, therefore, assigned the same financial value, at \$5.00 each.....	4,600.00
5. Persons treated for hookworm disease, 2,176, at \$2.00 each.....	4,352.00
6. Communicable diseases controlled by quarantine or otherwise...	15,414

Assuming that 33 per cent more cases would have occurred in case no protective measures had been employed, there would have been a total of 20,542 foci of infection instead of 15,414. Five per cent mortality among the 5,138 prevented cases would have cost 257 lives. Placing the economic value of persons of this group (mostly children) at \$1,000.00 the work of the County Health Departments has saved \$257,000 on this item. Placing the economic loss of the other 4,881 cases that would have endured illness and recovered at \$10.00 per case we have another \$48,810.00 saved by this work. Total.....	\$305,000.00
7. Seventy-seven thousand two hundred and forty-four persons were vaccinated against typhoid fever. According to accepted conservative estimates 366 cases of typhoid fever and 36 deaths from this disease were prevented by this means. Practically all typhoid cases are among adults, whose economic life value is rated at \$4,000.00 each. The saving of 36 adult lives is thus an economic gain to the State of \$144,000. The 330 other cases that would have occurred and recovered were spared an expense of \$200.00 each for physician's and druggist's bills, and loss of work, or a total of \$66,000 for the item of sickness alone. The total returns for the typhoid vaccination work may thus be placed at.....	\$210,000.00
8. County patients treated, 1,232, at 25c per month, or \$3.00 per year	3,696.00
9. Life extension examinations, 4,281, at \$5.00 each.....	21,405.00
10. School Unit: 8,119 children in the coöperating counties were reported by the Health Officers as having physical defects corrected. Not all this work, however, should be credited to this Bureau as a large portion of it was done in coöperation with the Bureau of Medical Inspection of Schools. It is fair to assume, however, that half of this work was due directly to the efforts of the Health Officers in these counties. This would permit of credit for 4,059 children relieved of physical defects. The bulk of these corrections were dental or oral, though there is included in this number a considerable proportion of tonsil and adenoid conditions which should be rated at higher financial values than dental work. But since the reports from the Health Officers do not make a classified statement of defects corrected, they shall all for the sake of conservatism be rated in this calculation as children treated for dental defects. To conform with the calculations made by the Bureau of Medical Inspection of Schools a value of \$10 for each child so treated is here assigned, which would yield for this item a total of.....	40,590.00
Total	\$941,365.00
In conclusion the following summary is submitted:	
Total cost of work for Biennium, 1918-1920.....	\$175,174.37
Financial values returned to State as a result of the more important items of work done.....	731,365.00
Net gain	\$766,190.63

WORK OF THE BUREAU OF MEDICAL INSPECTION OF SCHOOLS

Character of Work

OBJECTIVES

The object of the work of the Bureau of Medical Inspection of Schools is (1) to arouse the teachers of the elementary schools of North Carolina to the necessity of making the same efforts to teach the children things they should know for the development of their bodies and for the protection of their health, that they make for their intellectual advancement; (2) to discover the children who have remediable defects, and to have them treated while curable and before the condition becomes chronic.

METHODS

In order to explain the methods of work in this department it is necessary to consider the methods in relation to the objectives.

Method for Objective 1.—Written instructions for teachers have been prepared covering every phase of medical inspection of school children. Cards for recording the exact history and results of the preliminary physical examination of each child have been prepared. All this literature has been placed in the hands of the teachers, county by county, as the work progressed. Lectures by competent physicians and specially trained nurses and others have been made direct to teachers individually in small groups and in large institute gatherings. Competent officials have made examinations of children in the presence of teachers to demonstrate by example the need for the examination, the purpose, and how to do it. Health talks in simple language have been made to the children from the first grade up. Leaflets and pamphlets on health subjects, simply written, have been placed in their hands.

Method for Objective 2.—The methods devised to discover the defective children are: (a) The teacher after consultation with the parents when necessary and after personal study of each child records on a prepared card the findings of such preliminary examination; (b) The cards are sent to the Bureau of Medical Inspection of Schools of the State Board of Health at Raleigh. The Bureau has competent agents who carefully study and classify these cards into two groups, those representing supposedly normal or supposedly defective children. Immediately following this study this agent, generally a trained nurse, visits the county and makes a reexamination of all children reported suffering from common defects; (c) Those of the children thought to be greatly in need of medical, surgical or dental service are advised of the fact together with their parents, but before treatment is finally arranged for competent medical examination is made; (d) Special arrangements are made for club operations and dental treatment, results of which are described under the head of *Results Obtained* of this department.

ROUTINE WORK

Biennial period ending December 1, 1920:	
Letters Received	5,559
Letters written—Individual	3,876
—Multigaph	3,790
Total	7,666
Reports Prepared	51
Articles written—Bulletin 7	words 41,365
—Other Publications 18	words 20,050

Pamphlets Prepared	31
Days Spent Out of Office on Official Business.....	134
Pieces of Literature Distributed.....	499,995
Addresses Delivered—Number	1,134
Attendance	57,907

MONTHLY AVERAGE

Letters Received	231
Letters written—Individual	161
—Multigraph	158
Total	319
Reports Prepared	2
Articles written—Bulletin	1
Other Publications	1
Pamphlets Prepared	1
Days Spent Out of Office on Official Business.....	6
Pieces of Literature Distributed.....	20,833
Addresse Delivered—Number	47
Attendance	2,412

FORCE EMPLOYED

Director of Bureau, five full-time dentists, three part-time dentists, six full-time trained nurses, one stenographer.

BUDGET

Annual amount received from Executive Department.....	\$ 7,602.28
Annual amount received from Special State Funds.....	50,000.00
Amount received from Counties.....	559.51

RESULTS OBTAINED

Some of the tangible results of the work of this department may be enumerated as follows:

1. Through the system of medical inspection organized and maintained by this department for finding defective school children, 25,587 children have received free dental treatment in the public school clinics during this period, paid for entirely by funds expended through this division of the State Board of Health. 44,092 permanent fillings have been placed, thereby saving that many permanent teeth which would have been otherwise lost. The economic value of this specific assistance, as well as the educational influence on those children treated and the more than 9,000 additional children examined by the dentists but not treated, cannot be worth less than \$10 per child treated or \$255,870. The dental clinics were conducted in 37 counties.

2. Following up the preliminary examination first made by the teachers and reported on the proper cards, specially trained nurses sent out by this department have reexamined 60,770 school children. These children had been reported by the teachers as possibly suffering from common defects. Most of them were found to have one or more of the common physical defects, such as decayed teeth and diseased throats. No possible estimate of the immense educational value can be placed on this service to public school children by teachers and nurses.

3. Tonsil and adenoid clubs have been originated and put into operation by this bureau for the purpose of following the examinations with treatment when needed. This activity has embraced 33 counties in which clinics have been held. A total of 2,338 school children have been operated on in these clinics with the loss of only one life, a mortality record nearly five times

better than the latest published hospital records by the Journal of the American Medical Association. The financial equivalent of one of these operations negotiated through private methods, without considering the far-reaching effect on the whole life of the child of neglecting to have this important operation done, cannot be less than \$50. In fact the operation alone costs more in many places of the State. Thus the total money value of 2,337 successful operations is certainly not less than \$116,850. But the most important consideration is that a very small percentage of the children so essentially helped could even have had the opportunity otherwise.

THE STATE LABORATORY OF HYGIENE

The following is a report of the work of the State Laboratory of Hygiene for the biennial period from December 1, 1918 to November 30, 1920. As the report is compiled November 22, 1920, the last year is therefore not complete.

SYNOPSIS OF WORK

Specimens Examined:

Sputum	3,332
Swabs for Diphtheria.....	3,544
Widal Tests	2,403
Malaria	661
Intestinal Parasites	4,066
Rabies	809
Wassermann	19,498
Gonorrhreal Fixation	209
Gonococci	1,250
Water	4,910
Pathological Tissue	268
Various	234
Urine	799
Total	41,983

Units Diphtheria Antitoxin Distributed.....	159,803,000
Units Tetanus Antitoxin Distributed.....	1,002,000
Doses Typhoid Vaccine Distributed.....	755,135
Doses Whooping Cough Vaccine Distributed.....	15,210
Doses Smallpox Vaccine Distributed.....	179,815
Pasteur Antirabie Treatments Distributed.....	815

The receipts for this period are as follows:

Appropriation	\$50,000.00
Loan authorized by Special Session.....	15,000.00
Special Appropriation for Deficit.....	3,550.00
Contract Work for Wake County.....	250.00
Water Taxes	12,928.41
Pasteur	3,526.00
Biological Products	7,052.20
Fees	3,183.16
Total	\$95,489.77

The services of the laboratory extend to every county and practically every community in the State, and reach directly about 200,000 citizens. It is impossible to place an estimate on the value of the saving of life and health, but we believe that the reduction in the typhoid incidence and death rate, which is in large measure due to the use of prophylactic typhoid vaccine, would alone justify all the expense of the laboratory during its twelve years of existence. Some of the results, however, can be given a definite and accurate financial value. If there had been no State Laboratory of Hygiene in existence, the work done would have cost the citizens of the State the following amounts:

19,707	Wassermann and Gonorrhreal Fixation Tests at \$5.00.....	\$ 98,535.00
4,910	Examinations of Water at \$5.00.....	24,550.00
799	Examinations of Urine at \$5.00.....	3,995.00
16,567	Other Examinations Averaged at \$2.50.....	41,417.50
755,135	Doses Typhoid Vaccine at 50c.....	377,567.50
15,210	Doses Whooping Cough Vaccine at 50c.....	7,605.00
179,815	Doses Smallpox Vaccine at 15c.....	26,972.25
<i>Diphtheria antitoxin distributed:</i>		
6,525	1,000 unit packages at \$2.00	\$13,050.00
1,931	3,000 unit packages at 3.50	6,758.50
8,245	5,000 unit packages at 5.00	41,225.00
10,626	10,000 unit packages at 7.50	79,695.00
		<hr/>
668	Tetanus antitoxin, \$3.50.....	2,338.00
815	Pasteur Treatments Distributed (low estimate).....	16,300.00
		<hr/>
	Total	\$740,008.75

WORK OF THE BUREAU OF EPIDEMIOLOGY**Character of Work****OBJECTIVES**

To prevent and control the occurrence of whooping cough, measles, diphtheria, scarlet fever, infantile paralysis, cerebro-spinal meningitis, chicken-pox, septic sore throat, German measles, smallpox, typhoid fever, trachoma, and ophthalmia neonatorum (sore eyes in the new-born).

METHODS*Section 1—The County Unit*

A quarantine officer for each county and city having a separate health department in the State, has been secured. He is the Bureau's representative in the local field. His duties are as follows:

- (a) To secure reports from parents, teachers, and physicians of all cases of communicable diseases.
- (b) To keep an accurate record in his office of all reports.
- (c) To transmit all reports daily to the Bureau of Epidemiology.
- (d) To supply the parent, guardian, or householder, when the disease is reported, with rules and regulations governing that person, with a placard to be posted on the house, and with a pamphlet descriptive of the disease, its dangers, cause, mode of infection, and methods of control.
- (e) To inform the teachers in the community where the disease exists that the disease is present, and to supply them with rules and regulations governing the school while the disease is present, and with pamphlets descriptive of the disease, its dangers, cause, mode of infection, and methods of control, to be distributed through the children to the parents represented in the school.
- (f) To make the presence and locations of diseases known to the public by publishing notices in the county paper when the disease appears and how to prevent it.
- (g) To furnish householders forms to report diseases in their community which have not previously been reported.
- (h) To investigate all cases of suspected contagions which have not been reported, to determine the nature of the disease.
- (i) To enforce the laws, rules and regulations governing the control of communicable diseases.
- (j) To make monthly reports to the Bureau of Epidemiology of all the work, educational, administrative, or otherwise, done during the month.

Section 2—The State Unit

1. The daily reports of each of the communicable diseases are recorded by the Bureau of Epidemiology by the counties in which they occur. These are permanent records of the Bureau, and they show the number, location, and increase or decrease in the number of cases of each disease from month to month and from year to year.

Epidemics are handled in the following way:

- (a) The people in the community are notified by news articles, announcement at meetings, etc., of the presence of the disease and are given instructions how to prevent the development of further cases.
- (b) A history of each case is solicited so as to show the relation of the case to the usual sources of infection.
- (c) In epidemics of typhoid fever, diphtheria, or smallpox, arrangements are made for having the susceptible people of the community protected against

the disease by vaccination. The people are notified of such arrangements and are encouraged to avail themselves of the opportunity.

(d) An investigation of the sanitary and hygienic conditions in the immediate vicinity of each case is made.

(e) The facts in the history of the cases and the findings of the sanitary and hygienic conditions are tabulated according to epidemiological methods so that the exact sources of infection are determined.

(f) Recommendations of the necessary measures for the control and prevention of the diseases are made to the proper authorities.

(g) When the nature of the disease is such that public gatherings are permissible, a public meeting is held to advise the public as to the modes of infection, dangers, and measures necessary for the control of the disease, for it is through the coöperation of the public that diseases are controlled.

(h) State-wide publicity is given epidemics, to warn the people of the presence of the disease, to force the local authorities to take action to stop its spread, and educate the people in disease prevention.

2. Weekly telegraphic and monthly written reports of all cases of infectious and contagious diseases reported to the Bureau of Epidemiology are made to the Surgeon General, United States Public Health Service, Washington, D. C.

3. All deaths from the reportable diseases reported to the Bureau of Vital Statistics are checked against the reports of cases, to see if the cases which resulted in death were reported. If not, then proper action is taken against the person failing to report.

4. Monthly news letters are issued monthly by the Director of the Bureau to the county quarantine officers. These serve a two-fold purpose. (a) It gives "points" of interest on quarantine work to each county quarantine officer and establishes contact between all; (b) It reminds them of the monthly report being due.

5. Monthly reports of the quarantine officers are given a detailed examination by the Director and where it is seen necessary, letters are written to the quarantine officer and the county commissioners of the non-performance of duty.

6. All report cards, blank forms, educational posters, placards and literature on the reportable diseases, and all rules and regulations governing the control of the diseases, are prepared by the Secretary and the Epidemiologist of the State Board of Health, and distributed to the various quarantine officers by the Bureau of Epidemiology.

7. Each diphtheria, typhoid fever, ophthalmia neonatorum, and trachoma case reported, receives special forms treating these diseases from this Bureau in addition to those sent out by the quarantine officer.

8. Investigations of counties are made from time to time by trained inspectors, to determine:

(a) If the county quarantine officer is doing his duty, his records are examined, and he is questioned as to his knowledge of quarantine work. Several cases recently reported are visited to see if proper literature has been supplied to the family and if quarantine was established. Through this intimate contact with the quarantine officers much interest in the work has been created among them, with good results.

(b) If the physicians are reporting promptly all cases. The physicians who have reported but few cases recently are visited to ascertain if they have treated any cases which they have not reported.

(c) Special efforts are made to learn of unreported cases. These are visited to ascertain the nature of the disease and why they were not reported. The person found responsible for neglecting to make the report is dealt with according to law.

(d) The findings in the investigations of counties have been prepared, submitted to the editors and published in the county papers. These publications give the people an opportunity to know what is going on in the county in disease prevention, and often they inspire some conscientious person to inform us of unreported cases which need to be dealt with.

9. Deaths from reportable diseases registered with the Bureau of Vital Statistics are checked each month to ascertain if "case" reports are filed. The quarantine officer is queried as to the "negatives" to remove possible error. If he has no record, the physician is given an opportunity to explain. Convictions follow on second offenses.

Section 3—Prevention of Typhoid Unit

Campaigns for giving free treatment to prevent typhoid fever are conducted after the following plan:

1. An agreement is signed by the chairman of the county board of commissioners to pay to the State Board of Health 25c for each person receiving three treatments.

2. The State Board of Health assumes entire charge of the work.

(a) By posters, press articles, newspaper advertisements, announcements, public lectures, letters, etc., the danger of the disease is shown to the public to awaken their interest.

(b) A week previous to the opening is spent in the field doing publicity work by the physician who gives the treatments.

(c) A physician representing the Board visits convenient points in rural, as well as urban sections, four times at weekly intervals.

Section 4.—Prevention of Blindness Unit

A 1% solution of silver nitrate is furnished to physicians and midwives free of cost. Through the coöperation of other health agencies in the State, meetings are held to instruct midwives regarding prevention of blindness and improving their methods.

Section 5—Inspections of Hotels, etc., Unit

From time to time trained inspectors visit hotels, jails, convict camps, and State institutions to learn their conditions and to instruct the proprietors and superintendents as to improved methods of sanitation.

ROUTINE

To acquaint one with the routine of the Bureau, we are presenting the following table. It is difficult to make a report that will be clear to those not familiar with office work. There is so much that cannot be tabulated. For clearness the report is divided into (1) office work; (2) special work for prevention of typhoid; (3) special work for prevention of blindness; (4) field work; (5) special work on inspection of hotels and State institutions; (6) compilation of the monthly reports of the county quarantine officers. Each is a total of twenty-four months.

NORTH CAROLINA BOARD OF HEALTH

OFFICE WORK

Letters and postals received.....	5,844
Letters written—Individual.....	4,289
Multigraphed	55,621
Total	59,910
Questionnaires returned	2,182
Oaths of office received.....	76
Death report cards received.....	1,352
Replies to typhoid circulars.....	725
Telegrams received	1,151
Telegrams sent	482
Packages of supplies sent out.....	10,346
Bulletins sent out	70,809
Letters prepared for Quarantine Officers, No. forms.....	19
Articles prepared for publication by Q. O., No. of.....	9
Press articles prepared for publication based on information from this Bureau	100
No. forms prepared for reports, records, pamphlets, placards, etc.....	85
Cases of contagious diseases reported and recorded.....	52,472
Cases of influenza reported and recorded.....	100,976

SPECIAL WORK FOR PREVENTION OF TYPHOID

Antityphoid campaigns were conducted under the direction of the Bureau in the following counties:

Alamance, Anson, Bertie, Bladen, Cabarrus, Catawba, Chatham, Chowan, Columbus, (1919 and 1920), Craven, Duplin, Franklin, Gaston, Harnett, Hertford, Iredell, Johnston (1919 and 1920), Lincoln, Mecklenburg, Pasquotank, Perquimans, Randolph, Richmond, Rockingham, Rutherford, Stanly, Union, Warren, Wayne, Onslow.

Total counties	32
Total vaccinations (32 counties)	88,000

SPECIAL WORK FOR PREVENTION OF BLINDNESS

Midwives registered	3,576
Ampules of silver nitrate distributed.....	61,884
Cases of ophthalmia neonatorum.....	63

FIELD WORK

Trips made (Director)	42
Days out of office (Director)	106
Counties visited (Director)	135
Quarantine Officers interviewed (Director)	116
Counties visited (Inspector)	77
Quarantine Officers interviewed (Inspector)	67
Unreported cases, delayed reports, etc., investigated.....	70
Non-use of silver nitrate investigated.....	3
Reports published	22
Indictments	35
Convictions	35
Epidemics investigated	9
Addresses delivered (Director)	4
Total audience	667
Addresses delivered (Inspector).....	20
Total audience	187

SPECIAL WORK ON INSPECTION OF HOTELS, ETC.

Inspections:	Hotels	284
	Jails	105
	Convict Camps	59
	State Institutions	41
	Total	489

COMPILEATION OF MONTHLY REPORTS OF COUNTY QUARANTINE OFFICERS

Number county reports	22,005
Homes visited	14,238
Homes placarded	24,400
Articles published	2,510
Census sent out	485
Census returned	927
Schools visited	1,174
Schools notified	2,922
Smallpox notices posted	6,640
Lectures	912
Indictments	88

RESULTS OBTAINED

Informing the Public of Disease Prevalence and Prevention

During the two years there have been 52,472 (not including 100,976 cases of influenza) cases of communicable diseases handled by the machinery of the Bureau. The homes in which they occurred have been regulated by the quarantine officer as set forth under his duties, *a priori*. In addition to these homes, others in the school district where the diseases occurred have been instructed as to their means of spread and control. This information is in leaflets which were distributed by the teacher to the children. Thus each community has been educated on epidemiological subjects. This procedure has likely prevented sickness; it has surely saved lives by awakening the mothers to the gravity of the disease.

Lowering the Typhoid Death Rate

Typhoid fever which is endemic and often epidemic in our State is a problem for the Bureau. The reduction in mortality and morbidity from this disease is one outstanding feature in North Carolina's health work. A demonstration in this field has been made. Results are seen in the table.

Year	Cases	Deaths
1914	8,390	839
1915	7,440	744
1916	7,000	700
1917	6,280	628
1918	5,020	502
1919	4,270	427
*1920	3,000	300

The great reduction in typhoid in North Carolina during the past two years has been due to 32 campaigns conducted by the Bureau of Epidemiology giving three free treatments to 88,000 people, and to the treatment of 25,748

* 1920 estimate.

people by the Health Officers in the counties working through the Bureau of County Health work, and to the State-wide sanitation as enforced by the Bureau of Engineering and Inspection.

Based upon the deaths and cases for 1914, there were 564 lives saved and 5,640 cases prevented this year. A life is worth \$4,000 and a case of typhoid costs \$200. The State today is better off in man power to the extent of \$2,256,000 and the people have saved \$1,128,000 from sickness. The cost of anxiety and grief cannot be estimated.

Preventing Deaths from Diphtheria

The Bureau has made great efforts to have the North Carolina State Board of Health antitoxin in reach of every case of croup or sore throat. By placing this efficient low cost antitoxin readily available, the number of deaths is decreasing. In 1917 there were 308 deaths while only 183 have been recorded up to December 1, 1920.

There were 1366 cases in 1918 and 252 deaths. In 1919 reports of 3519 cases were received. The number of deaths was 242. This reduction in case fatality from 18.47 to 6.88% is attributed to the fact that the sale price of antitoxin was reduced to 25c. The reflection of the work of the Bureau against diphtheria will be a lower death rate for the current year.

Improving Practice of Midwifery

There have been 3,576 midwives registered with the Bureau. These have been instructed by lecture or letter as to improvement in their methods. Silver nitrate has been distributed to them and physicians to prevent blindness due to gonorrhreal infection of the eyes. No figures may be given, but due to the high prevalence of venereal diseases, we are sure that we are "saving the eyes" of at least a few children. Lectures to midwives have most likely saved many women from being infected, which causes death or affliction for life.

Observation on Inspections of Hotels, etc.

The sanitation of North Carolina's hotels, convict camps, State Institutions, and jails has been investigated by an inspector. The need of such work was found to be evident, and improvements have been found on second inspection.

BUREAU OF VITAL STATISTICS**Character of Work****OBJECTIVES**

The objective of the Bureau of Vital Statistics is to secure a permanent record of the more important facts concerning the birth and death of every citizen of the State of North Carolina, and from such records to prepare card indices and tabular classifications in such manner as to make readily available, on inquiry, the following information:

1. (a) The total number of deaths occurring annually in the State; (b) the birth rate of the State, that is, the number of births per thousand of the population; (c) the birth rates by races, white and colored; (d) the number of illegitimate births; (e) the number of stillbirths; (f) all of the foregoing data as to births with respect to each county, township, town and city. These facts permit of comparisons of one part of the State with another, of the birth rate of the two races, and of the birth rate of this State with that of the other States and other countries. Such information is necessary in forming conclusions as to vital conditions in North Carolina and in the enactment of suitable legislation for dealing with these conditions.

2. (a) The number of deaths occurring in the State of North Carolina annually; (b) the death rate, that is, the number of deaths per thousand of the population in North Carolina; (c) the number of deaths, by races, and the death rates by races in North Carolina; (d) the number of deaths among infants and young children as compared with the births, and the total deaths as compared with the total births, with net gain in population; (e) the number of deaths from the more important causes of death; that is to say, the number of deaths from typhoid fever, from tuberculosis, diphtheria, infantile diarrheas, etc., amounting altogether to a classification of about forty separate causes of death; (f) all of the foregoing data classified according to county, township, town and city. This information is absolutely necessary to understand vital conditions in the State; to know where health work is needed, against what causes of death health measures should be directed; and whether the work of health departments is associated with a decrease or no decrease in death rates.

3. Under one and two, information necessary for the public welfare, and available under the operation of the vital statistics law, has been briefly indicated. But the vital statistics law not only supplies information to legislatures, state and county commissioners, and other administrative bodies, which is necessary for framing conservation measures for human life, but it also records facts which may at any time become of great value to the individual. In matters of tracing ancestry, birth records are invaluable; also in matters of proving age where the fact of age is in question, as for voting, as for the right to marry, as for the right to enter certain industries, as to entering school, as to liability for military service, etc.

METHODS

The Bureau of Vital Statistics secures the birth and death certificates for the births and deaths occurring in North Carolina through approximately fourteen hundred local registrars, appointed by the chairman of the boards of county commissioners for the various townships and by the mayors for the various incorporated towns and cities of the State. The duties and powers of the local registrars are defined in chapter 109, section 22, Public Laws of 1913. The county pays the local registrar fifty cents for each birth and death certificate furnished by them to the office of the State Registrar at Raleigh. The vital statistics law makes it the duty of the doctors and mid-

wives in attendance on a birth to file a birth certificate with the local registrar of the district in which the birth occurs and makes the undertaker, or person acting as undertaker, responsible for the filing of the death certificate. The birth and death certificates filed with the local registrars of the State are sent to the State Registrar on the fifth of the month succeeding the month in which the birth or death occurred. The certificates received in the office of the State Registrar are examined, and, if incorrect or incomplete, (as a large per cent of them are) effort is made to secure the information necessary to complete them. The certificates are then classified and tabulated according to county, townships and registration districts, according to races, according to age at death, according to cause of death, according to death rates and birth rates, etc., in order to make readily available, upon request, the information mentioned under the heading of Objective.

ROUTINE WORK OF BUREAU

The routine work of the Bureau of Vital Statistics is indicated in the following table:

**SUMMARY OF WORK DONE BY THE BUREAU OF VITAL STATISTICS DURING FISCAL
YEAR, DECEMBER 1, 1918—DECEMBER 1, 1919, THE FIRST TEN
MONTHS OF 1920, AND ESTIMATE FOR THE MONTHS
OF OCTOBER AND NOVEMBER**

Item	Fiscal Year December, 1918— December, 1919	First ten Months, 1920	Estimate for October and November (Monthly Average)	
Letters and postals received.....	19,341	11,420	1,142	1,142
Casket dealers' reports received.....	4,315	4,391	439	439
Supplemental reports received.....	1,871	1,668	167	167
Violation blanks received.....	128	119	12	12
Report cards received from local register.....	(note)	6,283	628	628
Acceptance papers received from new register:				
Local.....	137	123	12	12
Deputy.....	134	106	11	11
Acceptance papers sent appointees.....	207	169	17	17
Individual letters written.....	22,870	16,998	1,699	1,699
Form letters sent.....	7,762	15,938	1,594	1,594
Postals sent.....	271	2,051	205	205
Packages supplies sent.....	4,612	6,586	659	659
Number credit certificates sent.....	1,994	5,867	587	587
Number certified copies made.....	(note)	201	20	20
Tables made.....	56	48	5	5
Cards punched for tables.....	(note)	30,952	3,095	3,095
Cards proof-read for tables.....	59,007	38,571	3,857	3,857
Birth reports furnished Davidson Co.....	(note)	572	57	57
Cards furnished Dr. McBrayer, giving names of decedents from tuberculosis.....	(note)	2,526	253	253
Indexing:				
Cards made.....	116,592	95,972	9,597	9,597
Cards proof-read.....	116,592	88,547	8,855	8,855
Cards assorted.....	153,936	89,215	8,922	8,922
Cards filed.....	167,474	86,620	8,662	8,662
Permanent indexing:				
Names copied in 1920 for permanent index.....		9,875	(note 2)	
Names proof-read.....		46,764	(note 2)	

EIGHTEENTH BIENNIAL REPORT

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Item	Fiscal Year December, 1918- December, 1919	First ten Months 1920	Estimate for October and November	
Multigraph work:				
Letterheads.....	10,000	5,000	none	none
Cards.....	500	1,531	153	153
Circular letters.....	3,050	8,262	826	826
Multigraph work for Bureau Epidemiology:				
Letters.....		1,974	none	none
Forms.....		5,000	none	none
Telegrams.....		130	none	none
Cards.....		200	none	none
Transcribing:				
Transcripts made and proof-read.....	112,697	111,420	(note 2)	(note 2)
Transcripts and certificates numbered.....	225,394	205,304	(note 2)	(note 2)
Certificates received, calendar year 1919:				
Births.....	72,948	-----	-----	-----
Deaths.....	32,415	-----	-----	-----
Stillbirths.....	5,877	-----	-----	-----
Total.....	111,240	-----	-----	-----
Certificates received, <i>first eight months</i> , 1920:				
Births.....	55,428	7,179	-----	7,179
Deaths.....	23,314	2,915	-----	2,915
Stillbirths.....	4,885	611	-----	611
Totals.....	83,627	10,705	-----	10,705
Field work:				
Days out of office on official business.....	16	(note 3)	(note 3)	(note 3)
Number convictions secured.....	3	-----	-----	-----
(Dr. Gordon unable to attend to field work after May 1, 1919.)				
Field work under J. F. Gordon, Special Agent:				
Local registrars interviewed.....	113	-----	-----	-----
Midwives interviewed.....	2	-----	-----	-----
Undertakers interviewed.....	57	-----	-----	-----
Doctors interviewed.....	4	-----	-----	-----
Unreported births and deaths investigated.....	100	-----	-----	-----
Indictments.....	13	-----	-----	-----
Convictions.....	12	-----	-----	-----

*(1919) Index to deaths and births for 1909-1912, inclusive, deaths and births for year 1914 and births for 1915, copied on sheets from card index file, proof-read and bound into volumes during fiscal year, December, 1918-December, 1919.

Number of certificates for 1919 taken from monthly reports and were not checked with birth and death certificate volumes.

(Note)—No accurate record kept.

(Note 2)—Impossible to estimate.

(Note 3)—This record was entered in reports of Bureau of Epidemiology until August 1, 1920. No report since that time.

Per cent of work not covered by the above report, 40%.

RESULTS OBTAINED

Without going into unnecessary detail, it may be said that the objective of this Bureau, as aforestated, has been reached and that all of the information, with its vital bearing upon the public health needs of the State and with the public health accomplishments of the State is readily and completely available.

As a mere indication of the practicable value of the work of this Bureau, we may point out the fact that the birth rate of North Carolina is very high, one of the highest in the United States, and that the death rate in North Carolina, notwithstanding the high birth rate, giving us an exceptionally large age group of tender years with high fatalities, is exceptionally low, the lowest of any State on the Atlantic or Gulf Coast. To be brief, the vital records of the State show that North Carolina is one of the healthiest States in the Union.

Another sample of information, in 1918 there were 252 deaths from diphtheria with 1,366 cases. In 1919 there were 242 deaths and 3,519 cases, showing that by the use of antitoxin deaths from diphtheria have been greatly reduced, and this is no doubt due in a great measure to the free distribution of antitoxin. Another sample of information obtained through the Bureau of Vital Statistics is the record of the State in the decrease of typhoid fever as indicated in the following table of deaths and cases of this disease during the last seven years, that is, the seven years for which we have had a vital statistics law with a record of deaths:

Year	Deaths	Cases *
1914	839	8,390
1915	744	7,440
1916	700	7,000
1917	628	6,280
1918	502	5,020
1919	427	4,270
1920	300†.....	

*Estimated on known average fatality of 10 cases per 1 death.

†From all indications there will be less than 300 deaths from typhoid fever. Up to September 1, there were only 154 deaths reported.

WORK OF THE BUREAU OF PUBLIC HEALTH NURSING AND INFANT HYGIENE

Duties and Methods

COOPERATIVE ARRANGEMENT BETWEEN STATE BOARD OF HEALTH AND RED CROSS

The Bureau of Public Health Nursing and Infant Hygiene is jointly financed and controlled by the North Carolina State Board of Health and the American Red Cross and represents the mutual interests of these agencies in the protection of motherhood and childhood and in dealing with the problem of tuberculosis through the agency of public health nurses.

The duties and methods followed by the Bureau of Public Health Nursing and Infant Hygiene are perhaps best set forth in the written understanding entered into by the participating agencies—the State Board of Health and the American Red Cross—which follows:

AGREEMENT BETWEEN THE AMERICAN RED CROSS AND THE NORTH CAROLINA STATE BOARD OF HEALTH FOR A COOPERATIVE PLAN OF WORK BETWEEN THE TWO AGENCIES FOR THE STATE OF NORTH CAROLINA

It is hereby agreed by the North Carolina State Board of Health and the American Red Cross, that the "Suggestion of principles for the coöperation of the Red Cross with State Departments of Health and other agencies in the field of public health nursing" submitted by Dr. Livingston Farrand, Chairman of the Central Committee of the American Red Cross, to the Executive Committee of State Health Officers July 29, 1919, and as amended by the said committee and as accepted by Dr. Livingston Farrand for the Central Committee of the American Red Cross in a letter under date of August 15, 1919, to Dr. E. G. Williams, representing the State Health Officers, together with the change in the wording of the amended suggestions as suggested in paragraph three of Dr. Farrand's letter to Dr. Williams, shall be accepted as guiding principles in this agreement. The aforesaid suggestions as amended and as hereby adopted for the purpose of this agreement, are as follows:

I. In undertaking to develop public health nursing, the Red Cross does not seek to supplant or compete with state and local departments of health or other organizations—national, state or local, public or private, engaged in the same work. It seeks rather to supplement their activities by assisting legitimate public health nursing agencies and by establishing itself or working with other agencies to establish community nursing services. It plans to interest its chapters throughout the country in public health nursing with this purpose and policy in view.

II. The Red Cross believes that in time public health nursing should and will become a public service conducted by the state, county or municipality, through their official health agencies. Red Cross division officers will seek consultation with the State health authorities in each State, where this has not already been done, for the purpose of learning what plans the State Department of Health may have for the developing of public health nursing, and of determining in what way the Red Cross may coöperate and make Red Cross plans for the development of this work by its chapters throughout the State conform to the plans of the State Department of Health. In this undertaking the Red Cross will have as its object the ultimate assumption by the State, counties and municipalities of public health nursing services initiated by its chapters.

III. Following this principle, the Red Cross will encourage the creation of a bureau, division or subdivision of public health nursing within the State Department of Health which should assume such supervision of public health nursing as may be assigned to it by the Chief Health Executive Officer of the State.

IV. (a) Looking toward the establishment of the bureau, division or subdivision a State supervising nurse might be appointed to serve the State Department of Health, who would study the public health nursing needs of the State, would work out a plan to cover them, assume supervision of local services as indicated in paragraph III and correlate so far as possible the nursing activities of other agencies within the State, such as the Red Cross and the State Tuberculosis Association.

(b) In states where these two agencies are working extensively it is suggested that the state supervising nurse should have assistant supervising nurses, one in charge of the nursing activities of the Red Cross and one in charge of these activities for the State Tuberculosis Association. These two agencies would provide salaries for the assistants in charge of their respective agencies. The assistants would be responsible both to their respective agencies and to the State Supervising Nurse and would submit their plans to her for adjustment and endorsement.

V. Where state supervising nurses, assistant supervising nurses, or other public health nurses attached to the state health organization are supported by funds contributed jointly by the state health organization and other agencies, or contributed by such agencies alone, appointment should be made by the state health executive with the approval of the participating agencies. Public health nurses supported wholly by funds contributed by the American Red Cross should be free from civil service restrictions.

VI. Where the State Department of Health is unable to provide the salary for a state supervising nurse, and where some mutually satisfactory plan of coöperation such as that outlined above has been agreed upon by the State Department of Health, the Red Cross and State Tuberculosis Association, the salary might be paid in part or in whole by any or all of these and other agencies. This should be a temporary measure, the state to assume the salary as soon as possible, and the nurse, regardless of the source of her salary, should be state supervising nurse for the State Department of Public Health.

VII. Where the Red Cross pays in whole or in part for any nursing services, Red Cross standards of appointment of nurse and services should be observed.

VIII. Public health nursing as carried on by the Red Cross may cover any of the following activities:

- Prenatal or infant welfare work.
- Maternity service.
- School nursing.
- Control of communicable diseases, including tuberculosis and venereal diseases.
- Industrial nursing.
- Care of the sick on the visit basis.

Which one or ones of these branches is to be undertaken by the Red Cross Chapter in any given community would be determined by the need, by the adequacy of any existing services, by the practical factors of territory to be covered and population to be served and by the plan adopted by the Red Cross after consultation with the State Department of Health for the development of public health nursing by the Red Cross in that state.

IX. The Red Cross has already authorized its chapters to use their funds in their territories to organize and maintain public health nursing, to assist other agencies to organize public health nursing and within certain limits to contribute funds to an existing nursing association. These expenditures are subject to the approval of the division manager.

X. The divisions will be permitted at their discretion, subject to the approval of national headquarters, to pay a part or all of the salary for a state

supervising nurse and for an assistant supervising nurse who is in charge of Red Cross activities.

In accordance with the aforestated aims and principles, we the undersigned representatives of the American Red Cross and the North Carolina State Board of Health, agree to the establishment of a plan of work as follows:

Plan of Work

STATE MACHINERY AND FUNCTIONS

1. Machinery.—It is understood that the North Carolina State Board of Health will establish a bureau of public health nursing consisting of a State supervising nurse, two assistant supervising nurses, a stenographer, and a clerk. The State supervising nurse shall be nominated and employed by the State Health officer subject to the approval of the American Red Cross. The other personnel of the bureau shall be appointed by the State supervising nurse, with the approval of the two participating agencies.

2. Funds.—Funds for the maintenance of the bureau of public health nursing shall not exceed \$12,000 annually, and shall be shared jointly by the North Carolina State Board of Health and the American Red Cross. The North Carolina State Board of Health agrees to furnish, exclusive of its part of the above sum, office room, light, water and fuel.

3. Functions.—The bureau of public health nursing shall (1) carry on a state-wide educational plan of work directed to the improvement of maternal and infant hygiene; and (2) assist in the establishment of adequate public health nursing services in the counties of North Carolina in accordance with plans hereinafter designated "A" and "B."

COUNTY MACHINERY AND FUNCTIONS

1. Machinery.—There shall be appointed, in so far as it is possible to obtain funds and to properly supervise, one or more county public health nurses in the counties of North Carolina. The county public health nurses shall be appointed by the State supervisor of public health nursing, with the approval of the State Health Officer and the American Red Cross. In each county employing a county public health nurse, there shall be organized an advisory council of public health nursing to advise and assist the county nurse. This advisory council shall be composed of members of the county board of health and the local Red Cross Committee on Nursing Activities.

2. Funds.—The funds for the support of the county public health nurse, or nurses, shall be contributed by the county authorities and by the local Red Cross Chapter.

3. Functions.—It is understood that the greatest value of the county public health nurse lies in actual educational work in the field rather than in routine work in the office, and, in accordance with this general principle, the work of the county nurse will be to assist in the development of, or develop, the following plans of work:

PLAN A

Respecting Existing County Contracts.—At present, there are fifteen counties in North Carolina with health departments established for from one to three years by written contracts between the county authorities, the North

Carolina State Board of Health the International Health Board, and the United States Public Health Service. Funds for the work in these counties are contributed by the participating agencies. While it is impossible for the North Carolina State Board of Health to alter its contract with these fifteen counties and other participating agencies without the consent of the parties to the contract, the State Board of Health engages to bring about, if possible, a coördination of the nursing service in these counties in accordance with plan "A" as hereinafter set forth.

Respecting Future County Contracts.—In the organization of county health departments taking effect after the date of this agreement, the county public health nursing service will be organized in accordance with plan "A" as hereinafter set forth.

Direction and Supervision of County Health Nurse.—The work of the county public health nurse shall be under the direction of the county health officer and the supervision of the State Supervisor of public health nursing.

Scope of Work.—The county health nurse shall attempt the successful execution of the following units of public health work: the infant hygiene unit, the tuberculosis unit, the quarantine unit, the medical inspection of schools unit, and the soil pollution unit.

1. Infant Hygiene Unit.—The infant hygiene unit shall consist of (1) the organization and instruction, by lectures and demonstrations, of mothers' clubs and other groups of people in the essentials of home sanitation, prenatal and postnatal care, and especially in the feeding of infants, in accordance with a course of lectures to be prepared or approved and furnished by the North Carolina State Board of Health. In connection with these clubs there shall be made, in accordance with forms and instructions to be furnished by the State Board of Health and approved by the American Red Cross, physical examinations and records of the children of the community which are brought in by their mothers for examination and advice. In this way, mothers' clubs will be utilized to develop a more intelligent and closer oversight of children by parents.

- (2) The keeping of a tack map of the county showing:
 - (a) breast-fed children,
 - (b) bottle-fed children,
 - (c) children under two years of age suffering from digestive disturbances or diarrheal diseases.
- (3) The nurse shall visit and personally confer with the parents of as many homes where there are "b" and "c" as possible.
- (4) Provisions at the office of the nurse, at the county town and at other appointed places and dates for conference with expectant mothers. These conferences may embrace among other things, the simpler tests of urinary analysis and pelvimetric measurements. Any important information elicited in these conferences shall be reported on regularly prescribed forms, with the permission of the expectant mother, to the family physician.
- (5) The adoption for the county of standard regulations for the control of midwives as submitted by the North Carolina State Board of Health, and as provided for under the laws of the State of North Carolina.

(6.) The organization and instruction of the midwives of the county, and the regulation of the practice of midwifery in such a way as to make the employment of midwives by obstetrical cases as safe as possible.

2. *Tuberculosis Unit:* (1) securing the names of all persons in the county who are afflicted with tuberculosis.

(2) Carefully recording the cases of tuberculosis in the county and deaths from tuberculosis in the county on a tack map as prescribed by the North Carolina State Board of Health.

(3) Visiting the homes of persons afflicted with tuberculosis as often as may be necessary to give the patient such nursing attention and the household such instructions as to enable them to utilize the best means of treatment, and those sanitary measures of safety necessary for the prevention of the spread of the disease to others.

(4) Investigating the general health of members of families where tuberculosis exists or has existed within three years preceding.

(5) Visiting every discharged soldier, sailor or nurse discharged from the army or navy on account of tuberculosis, and carrying out, in dealing with the aforesaid persons, the instructions of the North Carolina State Board of Health.

(6) Making such other investigations in regard to the presence of tuberculosis in the county as may be necessary and not inconsistent with the symmetrical development of the plan of work for the county health nurse as outlined in this agreement.

(7) A campaign of education through lectures, classes, and especially through the public schools by means of lantern slides, lectures, through moving pictures, and the distribution of suitable literature, the publication of newspaper articles to be submitted or approved by the Bureau of Tuberculosis, and the offering of suitable prizes to school children for essays on the subject of tuberculosis.

(8) Arrangements for clinics for the examination of persons with suspicious evidences of tuberculous infection, the medical examiner to be used in the clinic to be furnished by the Bureau of Tuberculosis of the North Carolina State Board of Health. This item would work out by the nurse conferring with persons suspected of tuberculous infection, securing certain general information regarding their condition, submitting it to the State Sanatorium, and later arranging for six, eight, ten, or twelve such persons as suggested by the Sanatorium to meet at some set time and place for a thorough examination by a specialist from the State Sanatorium.

3. *Quarantine Unit:*—The county health nurse shall assist the county health director in performing the duties required of him by the State law for the control of communicable diseases, and the rules and regulations of the North Carolina State Board of Health.

4. *Medical Inspection of Schools Unit:*—The public health nurse shall assist the county health director in recording and classifying the school children of the county afflicted with the common defects of childhood, and shall, through educational means carried on with families collectively and individually, bring about, in so far as is possible, the proper treatment of these children.

5. *Soil Pollution Unit*:—The county public health nurse shall assist the county health director in finding and treating children afflicted with hookworm disease, and by educational means seek to bring about the widespread adoption and use of sanitary privies at the homes of the people.

RECORDS AND REPORTS

The county public health nurse shall maintain such a system of records and shall make such reports as are prescribed by the two agencies to this agreement.

PLAN B

The county public health nurse, or nurses, shall under the direction of the State supervisor of public health nursing, carry out the following units of work:

1. *Infant Hygiene Unit*:—To be developed as described under this unit under plan "A."

2. *Tuberculosis Unit*:—To be developed as described under this unit under plan "A."

3. *Quarantine Unit*:—The county public health nurse shall assist the county quarantine officer in accordance with the arrangements between the said officer and the State Supervisor of Public Health Nursing in the control of communicable diseases as provided for in the laws of the State of North Carolina and under the rules and regulations of the North Carolina State Board of Health.

4. *Medical Inspection of Schools Unit*:—The county public health nurse shall, in accordance with instructions from the State Supervisor of Public Health Nursing, carry out such measures of school nursing and provisions for the treatment of defective school children as are practicable.

5. *Soil Pollution Unit*:—The county public health nurse shall endeavor to find the children of the county who are suffering from hookworm infection, to arrange for the proper treatment of these children, and to persuade the families of the county to provide against further soil infection by the installation and maintenance of sanitary privies.

Records and Reports

The county public health nurse shall maintain such a system of records and shall make such reports as are prescribed by the two agencies to this agreement.

ROUTINE WORK

The general activities of the Bureau of Public Health Nursing and Infant Hygiene are indicated in the following tabulation:

Letters received	7,335
Letters sent: Individual	3,841
Multigraph	81,317
Total	85,158

Reports prepared	34
Articles written: For Bulletin	(5) words..... 2,241
Other publications	(25) words..... 47,527
Pamphlets prepared	4
Health Bulletin issued	1
Bureau's publications (together with Children's Bureau supplied on request (March to November)).....	55,234
Days out of office on official business.....	60
Addresses delivered: Number (formal)	49
Total attendance	2,903

BUREAU STAFF

Director of Bureau; two assistant supervising nurses; stenographer, and a clerk comprise the full time workers on the staff. Services of a consulting pediatrician as needed.

BUDGET

North Carolina State Board of Health.....	\$5,000
American National Red Cross.....	5,000

RESULTS OBTAINED

1. *Prenatal Work.*—During the last biennial period 5,117 prenatal cases have been registered and have received advice and information as to the hygiene of pregnancy and the preparation for labor.

2. *Postnatal Work.*—During the last two years 5,852 babies have been registered and their mothers have been supplied with general information and special advice.

3. *Diagnostic Clinics for Tuberculosis.*—During the last 12 months this bureau has been assisting the Sanatorium in organizing and holding county tuberculosis clinics where persons who suspect tuberculosis infection may come for examination and advice. Within this time 14 clinics have been held at 37 different points in 10 counties, and a total of 1,067 persons have been examined.

4. *Preparing Public Health Nurses.*—The Bureau has arranged for and assisted 17 nurses in securing postgraduate courses in public health nursing.

5. *Providing County Public Health Nurses.*—The Bureau has arranged through local county Red Cross chapters and through the county commissioners for the employment of public health nurses in 25 counties and has secured and placed 25 specially qualified nurses in these counties.

6. *Funds Expended in County Public Health Nursing.*—At present a total of \$50,200 per year is being expended in counties for public health nursing and of this amount \$43,100 is contributed by local Red Cross chapters and the remainder \$7,100 by the county authorities. Of the counties employing public health nurses ten counties are without whole time health officers, and in these counties a total of \$19,750 is contributed annually by Red Cross chapters and the remainder, \$50 by the county authorities.

The following tabulation indicates the amount of work performed by the County public health nurses during a total of 136 months:

- 5,321 Nursing visits (giving demonstrations and bedside care in homes).
- 6,048 Infant welfare visits and individual instructions in baby care.
- 1,261 Prenatal visits and individual prenatal instructions.
- 1,734 Tuberculosis visits.
 - 875 Tuberculosis examinations (by specialist) secured.
 - 5,128 Instructive, coöperative, social service and survey visits.
 - 150 Patients accompanied to physicians, dentists, clinics or hospitals.
 - 510 Home visits to school children.
- 1,088 Prenatal cases registered with State Board of Health.
- 1,422 395 preschool age children and 1,027 babies, registered with State Board of Health.
- 1,652 Babies and young children weighed and measured, and mothers advised regarding diet.
- 282 Demonstrations of baby care and feeding, and group instruction on prenatal and infant care.

- Instrumental in getting:
- 96 Patients to use sputum cups,
- 24 homes screened,
- 826 sanitary privies installed.
- 11 exhibits planned and baby booths at county fairs,
- 374 individual and group instruction of midwives,
- 73 found who were not registered,
- 81 ignorant of law regarding use of silver nitrate,
- 238 furnished with same,
- 145 schools visited,
- 513 visits to schools,
- 415 hours' time spent at schools,
- 15,085 pupils examined—or weighed and measured—or inspected (assisted health officer to examine 260 additional).
- 26 excluded for contagions,
- 504 Treatments given at schools.
 - 550 Talks at schools- { 4 instructing groups of teachers to make physical inspections.
 - 335 to pupils in class.
 - 96 classes conducted (some at the teachers' summer schools).
 - 115 on Modern Health Crusade.

- “Modern Health Crusade” introduced into
- 27 schools, and
- 2,250 children enrolled.
- 696 general lectures and health talks.
 - 25 Tuberculosis slides with lectures given at points (total attendance 2,860).
 - 354 Hygiene and Home Nursing Classes conducted with attendance of
 - 3,216 90 Little Mothers' League classes conducted with attendance of
 - 387 fifty of whom have received certificates.
- 1,728 office and other treatments given, including:
 - 800 anti-typhoid.
 - 477 smallpox vaccinations
 - 180 Schick test.
 - 16 hookworm specimens obtained.
 - 27 Urinalyses made,
 - assisted with two deliveries.
- 67 days' duty with State Tuberculosis Clinics,
- 22 days assisting with State “T. & A.” or Dental Clinics,
- 52 weeks given to influenza duty.

The following table indicates the average month's work of the average county nurse:

- 39 Nursing visits (giving and teaching "bedside care" in homes).
- 44 infant welfare visits and individual instructions in baby care,
- 9 prenatal visits and individual prenatal instructions,
- 12 tuberculosis visits; 6 t. b. examinations (by specialist) secured,
- 37 instructive, coöperative, social service and survey visits,
- 1 patient accompanied to physician, dentist or hospital,
- 1 home visit to school child,
- 8 Prenatal cases registered with State Board of Health,
- 7 babies and 3 preschool age children registered with State Bd. H.
- 12 babies and young children weighed and measured, nutrition information and advice given when underweight,
- 2 demonstrations of baby care and feeding, and group instruction on parental and infant care.
- 2 individual or group instruction of widwives.
- 1 school visited.
- 3 visits to school.
- 3 hours' time spent at school.
- 110 pupils examined—weighed, measured—or inspected.
- 3 treatments given at school.
- 4 talks to teachers and pupils.
- 16 pupils enrolled in Modern Health Crusade.
- 5 general lectures and health talks given: (Monthly average of number of people seeing tuberculosis films, 20).
- 2 "Home Hygiene and Care of Sick Classes" (attendance, 22).
- 2 girls instructed in "Baby Care."

WORK OF THE BUREAU OF ENGINEERING AND INSPECTION**Character of Work**

This Bureau was created by an act of the General Assembly, February 24, 1919. The Bureau was organized May 1, 1919. Active field agents began work October 1, 1919. The activities of the Bureau are dual in nature and will therefore be described under two headings: that work which is purely Engineering in nature, and the activities of the Sanitary Inspection Section.

Engineering Section**OBJECTIVES**

1. Obtaining of the installation of public water supplies and sewerage systems for communities that have not heretofore had the advantage of such health protection and conveniences.
2. The stimulation of improvements in existing water supply and sewerage systems for the better protection of the public health.
3. The rendering of assistance to municipalities to guard against unsuitable, inefficient, inadequate or otherwise faulty installations of public water supply and sewerage improvements.
4. The increasing of the efficiency of plant operators and water superintendents, to further insure the safety and purity of the public drinking water supplies.
5. The education of the public and local officials to a more comprehensive understanding of the importance of the proper selection and supervision of public water supplies.

METHODS

In discussing the methods of this section it will be necessary to refer to the aforementioned objectives.

Method for Objective 1.—The securing of new water and sewerage systems and extensions is very closely connected with and assisted by the work of the inspection system. The officials of all municipalities have been shown the advantages, esthetic, financial, and from a health protection standpoint, of such improvements. Towns contemplating these improvements were offered a temporary concession in the enforcement of the privy law. Many towns that would not otherwise have been able to pass bond issues, have succeeded as a result of concessions offered. Many water supply and sewerage systems that are now completed or under construction could not have been obtained without this assistance.

Method for Objective 2.—By careful study of the records of laboratory analyses, unsafe water supplies have been detected, and investigated, after which this Department has advised or ordered certain improvements, or changes in the methods of operation or control for the better protection of the public health.

Method for Objective 3.—For the protection of municipalities against unsuitable or faulty design and construction, a careful study of the plans and specifications for the proposed improvements is made pursuant to the state laws and with the assistance and advice of one of the most able consulting

engineers of the State. As a result of such studies, the various phases of the proposed improvements are approved or disapproved. In case of disapproval the engineer is required to submit corrected plans in accordance with the recommendations of this Department. It is unlawful for construction work to proceed until all phases have been approved.

Method for Objective 4.—For increasing the efficiency of plant operators, the plants are visited, especially those in which water unsafe for domestic use is being distributed. An attempt is made to ascertain the source of pollution and directions are given for correcting the condition.

Method for Objective 5.—In order to educate the public and local officials to a better understanding of the importance of proper selection and supervision of public water supplies, bulletins are distributed in which are pointed out the means of pollution of water and the reasons for, and methods of, protection of the supply. In addition advantage is taken of every opportunity to impress upon local officials, the importance of these factors, either in regular meeting or by personal interview.

Section of Sanitary Inspection

OBJECTIVES

1. To study, ascertain and recommend for the public benefit, improved methods for the sanitary disposal of human excreta.
2. To secure the construction of sanitary privies at all homes and other places coming under the provisions of the state sanitary privy law.
3. To secure efficient and sanitary maintenance at all times, of such sanitary privies as are installed.

METHODS

In discussing the methods of this section it will be necessary to refer to the aforementioned objectives.

Method for Objective 1.—In order to keep informed upon the most advanced methods of excreta disposal, extensive field investigations are made. In addition, the results of the operation of the various methods of excreta disposal are observed by field representatives and the conditions in the various communities compared. Information is disseminated to the owners and occupants of homes through publications, and personal interviews by the inspectors.

Method for Objective 2.—To obtain the construction of sanitary privies in accordance with the requirements of the state sanitary privy law, the following methods are employed:

- (1.) The state is divided into ten districts and a thoroughly qualified sanitary inspector placed in charge of each district. The duties of the sanitary inspector are (a) to thoroughly explain to each property owner and tenant the reasons why he should build a sanitary privy promptly; (b) to explain fully the requirements of the law and the meaning of each; (c) to recommend the type of privy most suitable for the particular instance; (d) to collect, upon his first visit of the year, the annual state privy tax for that year; (e) to approve or disapprove the privies he finds, in accordance with whether or not the privy is constructed in accordance with the requirements

of the privy law; and (f) to prosecute persons responsible for noncompliance with privy construction and maintenance requirements of the law, when occasion requires.

(2) Extensive educational campaigns have been carried on through county sheriffs, registers of deeds, local health officers, mayors, postmasters, and such local officials as could be circularized. Through this means, with the aid of the newspapers and the distribution of posters and placards, practically every household in the state has become informed of the fact that there is a sanitary privy law, and received information concerning the best method of constructing a sanitary privy.

Method for Objective 3.—To secure at all times, effective and sanitary maintenance of privies, the sanitary inspectors continue the rounds of inspection, advising the householder of defects and how to remedy them.

ROUTINE WORK

Letters received	3,580
Letters written—Individual	3,467
—Multigraphed	6,013
Total	9,480
Magazines and bulletins received and reviewed.....	397
Articles written	33
Forms prepared	30
Telegrams received	257
Telegrams sent	309
Vouchers issued	461
Watershed inspection reports received and examined.....	211
Water analysis reports received and reviewed (polluted).....	204
Pamphlets, leaflets, bulletins distributed.....	42,105
Bulletins and laws issued to inspectors.....	120,450
Posters distributed	19,861
Plans and specifications approved—Water Works.....	32
—Sewerage.....	34
Plans and specifications disapproved—Water Works.....	0
—Sewerage.....	0
Plans (commercial privies) examined and approved.....	30
Plans (commercial privies) examined and disapproved.....	2
Days out of office on official business.....	140
Hours spent in conference (approximate).....	425
Number inspections made.....	59,726
Number re-inspections made.....	3,381
Percentage of work not embraced in above statement.....per cent	25

Important items not included in above statement:

1. Investigation of plans for water and sewerage improvements.
2. Training field men.
3. Prosecutions for non-compliance with privy law.

MONTHLY AVERAGE

Letters received	298
Letters written—Individual	288
—Multigraphed	500
Total	788
Magazines and bulletins received and reviewed.....	33
Articles written	3
Forms prepared	2½
Telegrams received	21
Telegrams sent	25
Watershed inspection reports received and examined.....	17½
Water analysis reports received and reviewed (polluted).....	17

Pamphlets, leaflets, bulletins distributed.....	3,508 3/4
Bulletins and laws issued to inspectors.....	10,037 1/2
Fosters distributed	1,655
Plans and specifications approved—Water Works.....	2 2/3
—Sewerage.....	3
Days out of office on official business.....	11 3/4
Hours spent in conference (approximate).....	35
Number inspections made.....	4,977
Number re-inspections made.....	281 3/4

Results Obtained

ENGINEERING SECTION

1. There are now planned or under construction 73 new water supplies and sewerage systems. Most of these are entirely new systems, affording conveniences and protection from fecal borne diseases for at least 15,000 homes, or about 75,000 persons, that have not heretofore had the advantage of such improvements.

2. Under the advice or direction of this Department, 7 new chlorine water sterilization plants have been installed, making contaminated water supplies safe for domestic consumption.

3. Three grossly polluted public water supplies have been investigated and directions given, which promptly carried out, prevented the occurrence of epidemics of typhoid fever, that would otherwise have been inevitable. It is of particular interest further to note that in the last two years there have been no water borne epidemics of typhoid fever in the State, a condition of which North Carolina may justly be proud.

4. During the winter and spring of 1920, the supply of chemicals for many filter plants became entirely exhausted on account of shipments being delayed or withheld, for lack of cars. By putting these plants in touch with more fortunate ones, where chemicals could be borrowed, and, through intercession with the Interstate Commerce Commission, obtaining priority orders for shipment of chemicals, all plants were kept supplied, and water borne epidemics of typhoid fever thus prevented.

5. Plans for three sewerage systems and seven water supplies have been rejected and revisions ordered. Provision is made, in the revised plans for the protection of the public health, whereas if the improvements had been made in accordance with the original plans, the public health would not have been safeguarded, and the municipalities would have been forced to seek relief at a great and unwarranted public expense.

SANITARY INSPECTION SECTION

The following items of work have been accomplished by the Sanitary Inspection Section.

1. Standard specifications and directions for the construction of approved sanitary privies have been invaluable to property owners in protecting them against unsuitable or faulty installation of privies. In one instance alone, where the installation of six hundred privies was involved, the owner was able to protect himself against inferior materials and workmanship by adhering to the state regulations. The material and workmanship were passed upon by a State representative and rejected in time to save the property-owner at least a \$5,000 loss.

2. From the reports of sanitary inspectors, (since Oct. 1, 1919), now engaged in enforcing the provisions of the state privy law, a conservative estimate places the number of privies, that now have been made sanitary, and that comply with the law, at 25,000.

A statistical study of typhoid reduction, in five Southern cities, which installed sanitary privies and which considered the economic gain in earning capacity, doctors' bills, druggists' bills, and nursing bills from typhoid fever prevented alone, and left out of the consideration losses from other fly-borne fecal diseases,—the diarrheas and dysenteries, especially diarrheas and dysenteries of infants,—shows an annual value of \$8.00 for each sanitary privy installed. To be well within, nay would say too far within, a reasonable estimate of the value of the installation of sanitary privies, let us assume, instead of \$8.00 as the true economic value of the sanitary privy, \$5.00. The installation, then, of 25,000 sanitary privies would have a financial equivalent of \$125,000.

3. Under the stimulus of this law 70 municipalities have undertaken extensions and new installations of sewerage, which will permanently remove, when completed, 15,000 open-back, disease-spreading, insanitary privies. This work is under way but not completed. We shall perhaps be well within the limits if we say that, taking the work as a whole, 25 per cent of it, or one-fourth of it, has been accomplished. That is equivalent to the substitution of sewerage for 3,750 privies, and giving each unit of sewerage installed a sanitary economic value of \$5.00 this item should be credited with a financial equivalent of \$18,750.

To conclude, this Bureau in the time under consideration has expended a total of \$46,299.75 and has returned to the people of the State a financial equivalent of not less than \$143,750.

By way of demonstration of the conservativeness of the above figures, attention is called to the fact that in June and July of this year, (the only two months of the typhoid season for which the record is now available) there were only 548 cases of typhoid fever reported while during the same period of 1919, there were 1173 cases of typhoid fever reported, and 135 deaths from the same disease. The activities of this Bureau therefore in the enforcement of the provisions of the state sanitary privy law have been instrumental in the prevention of 625 cases of typhoid fever, and the saving of 73 human lives (based upon 1 death for every ten cases of the disease). Using the same values employed in computation to obtain the values of \$8.00 per sanitary privy indicated in item 1, (*i. e.*) a human life valued at \$3,000, and the expense and loss for a case of sickness estimated at \$50, we arrive at the following result:

Financial saving for—625 cases of typhoid fever prevented=	\$ 32,250
—73 lives saved=	$73 \times 3,000$

Total saving to the State for June and July only.....	\$251,250
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These figures indicate that our estimate on the annual saving to the State of North Carolina for the number of sanitary privies installed is more than conservative for the results obtained even at this early date in the execution of the law.

REPORT OF THE BUREAU OF VENEREAL DISEASES

OBJECTIVES

The chief objectives for the Bureau of Venereal Diseases during the first complete biennium of its existence may be listed as follows:

1. The dissemination of information to the masses of the people concerning the character, prevalence, ravages and prevention of venereal diseases. The purposes of this dissemination of information are:

(a) To arouse in the individual a greater sense of moral responsibility for sex conduct in order that calamity to himself and others may be avoided by proper direction and control of the sex impulse.

(b) To emphasize for parents and teachers the necessity for giving children true information concerning the beginning of a new life before they obtain the information from vulgar sources.

(c) To furnish a concrete motive for repressive measures against prostitution as a means of preventing venereal disease by dealing with its carriers.

(d) To stimulate the provision of facilities for proper treatment of persons infected with venereal disease who are unable to pay for treatment from private physicians.

2. The Bureau acts as a clearing house for information gathered in reports of cases treated by physicians, reports of patients who refuse or discontinue treatment before becoming non-infectious, reports of persons who buy remedies at drug stores, and from other sources. This information is used as follows:

(a) Information concerning patients dangerous to the public health is referred to local health officers for investigation and action.

(b) Instruction and advice is given to persons infected with venereal disease concerning the necessity for proper treatment and continuing treatment until cured.

(c) Tabulations are made from the data collected in an effort to gain knowledge of the prevalence of infection and the best methods of prevention.

3. Another duty of the Bureau is to furnish advice and information concerning their personal problems to the many persons who write or apply in person for help with their difficulties.

ROUTINE WORK

Letters received	7,718
Individual letters sent.....	23,441
Circular letters sent.....	40,764 64,205
Packages sent	23,764
Telegrams received	248
Telegrams sent	350
Doses arsphenamine furnished indigent patients.....	537
Doses arsphenamine furnished to clinics.....	9,085 9,622
Venereal disease reports received from physicians:	
Gonorrhea	9,285
Syphilis	3,966
Chancroid	841 14,092
Number of venereal disease clinics established.....	11
Number of patients treated at clinics:	
Syphilis	2,304
Gonorrhea	2,237
Chancroid	412 4,593
Total number of treatments given at clinics.....	59,085

Sales reports from druggists.....	6,916
Sales of V. D. remedies reported by druggists.....	23,270
Lectures given to white audiences.....	545
Lectures given to colored audiences.....	444 989
Attendance at white lectures.....	67,655
Attendance at colored lectures.....	66,953 134,608
Motion picture exhibitions.....	284
Attendance at motion picture exhibitions.....	51,272
Keeping Fit exhibits made.....	167
Attendance at Keeping Fit exhibits.....	8,383
Exhibits other than Keeping Fit.....	48
Attendance at other exhibits.....	12,442
Total lectures, motion pictures and exhibits.....	1,488
Total attendance at lectures, motion pictures and exhibits.....	206,505
Total number of pamphlets distributed through all channels.....	506,779

METHODS

The methods employed in attaining the objectives set for educational work were fitted to the objectives themselves by attacking the matter first as a character building problem. Thus among the early lectures to be given were lectures relative to the contribution that sex makes to life and designed to stimulate higher ideals of sex conduct. The first exhibit campaign to be developed was the "Keeping Fit" campaign which was planned along similar lines. The importance of wholesome sex instruction for children was emphasized to the teachers of the State in a series of lectures given at the annual teachers' association meeting.

Standard pamphlets on various aspects of the venereal disease problem and designed for various groups of people were reprinted with such revisions as were deemed advisable. The February, 1920 number of the Health Bulletin was devoted to the venereal disease problem and proved so popular that another special number was published in July.

In addition to relying upon the general educational work to furnish a concrete motive for repressive measures against prostitution some special attention has been given to this problem. These efforts have consisted chiefly in gathering information concerning vice conditions and placing the information before local officials of the various communities concerned.

Supplementing the general educational measures, special inducements have been offered to stimulate the provision of facilities for treatment by the local authorities. Thus, the Bureau has assisted materially in the establishment and maintenance of clinics in eleven communities where local authorities were willing to undertake this work. These communities are: Asheville, Charlotte, Clinton, Fayetteville, Goldsboro, Greensboro, High Point, Raleigh, Rocky Mount, Wilmington and Winston-Salem. With the cut in the federal appropriation for the federal fiscal year beginning July 1, 1920, it became necessary to discontinue assisting in the maintenance of clinics. So complete had the need for clinics been demonstrated, however, that in nearly all of these communities clinics were kept open after the state and federal support had to be withdrawn.

As a means of stimulating the provision of proper facilities for treatment in communities too small to establish and maintain clinics a special cam-

paign was conducted during the spring and summer of 1920 for the purpose of bringing to physicians in rural communities information concerning the modern methods of diagnosis and treatment of venereal diseases. In this campaign meetings of physicians were arranged for the various counties, and lectures with motion pictures dealing with the diagnosis and treatment of venereal diseases were provided by the State Board of Health. Wherever patients could be brought in by the local physicians demonstrations of modern methods of diagnosis and treatment were given. The United States Public Health Service and the American Social Hygiene Association coöperated in this work by sending letters to the physicians urging attendance at the meetings.

In gathering information concerning cases of venereal disease dangerous to the public health, the Bureau has had recourse to the usual procedure of requiring physicians to report their patients and requiring druggists to report the sale of venereal disease remedies. These reports by physicians and druggists are required by Chapters 206 and 214, respectively, Public Laws of 1919.

The system of reporting provided by law and the regulations adopted by the State Board of Health is designed especially to furnish usable information concerning dangerous cases. For this reason physicians are required to report names and addresses only when in their judgment the patients should be under the supervision of the health officer in order to protect the public health. When patients are considered trustworthy, physicians may report their cases by number without disclosure of identity.

Reports that reach the office are so handled that information concerning cases that should be investigated is referred to the local health officer. Every effort is made to encourage reporting by physicians through courteous treatment rather than by harsh measures. In carrying out this policy a number of form letters have been drafted for use in the routine handling of venereal disease case reports.

When a physician reports the name and address of a patient, the following letter is filled in and sent to him for the purpose of permitting him to protect the identity of his patient in case he should have reported the name and address by mistake:

Your report that _____ residing at _____ is infected with venereal disease has been received.

When a physician reports a case of venereal disease by number and does not disclose the name of the patient it is presumed that the patient has been given careful instructions for preventing the spread of such disease and that in the opinion of the physician in charge the patient may be trusted to carry out such instructions. In that case no action is taken by this office.

When, however, a physician reports the name and address of his patient because he is unwilling to vouch for such conduct on the part of the patient as will prevent the spread of disease, it is desired to bring the case to the attention of the local health officer for such action as he may deem necessary for the protection of the public health.

Occasionally a physician reports the name and address of a responsible patient by mistake. This letter is designed to serve as a check on such occurrences. If in your judgment the person whose name and address you have reported is of such character as NOT to require action by the health officer to protect the public health, will you be kind enough to notify this office at once.

Failure to hear from you by return mail will be taken to mean that you wish your local health officer to deal with the case in the interest of public health, and information will be furnished him accordingly.

Permit me to thank you most cordially for your coöperation in handling the venereal disease problem.

Very respectfully,

MILLARD KNOWLTON,

*Regional Consultant, U. S. Public Health Service,
Director Bureau of Venereal Diseases.*

If no reply is received by return mail the case is referred to the local health officer by the following letter:

Enclosed is a copy of a report of a case of venereal disease recently received in this office. It is understood that the physician reporting the case does not wish to be responsible for such conduct on the part of the patient as will avoid exposing others to infection, but desires the matter placed in your hands.

Accordingly this case is referred to you for investigation and such action as may be required. In accordance with the provisions of Chapter 206, Public Laws of 1919, together with rules and regulations for carrying this law into effect, you are "directed and empowered" to examine suspected persons, and to order the treatment, isolation or quarantine of infected persons as may be necessary to protect the public health.

I would appreciate being informed what your investigation of this case reveals, and what action you find necessary to prevent the spread of infection.

Very respectfully,

MILLARD KNOWLTON,

*Regional Consultant, U. S. Public Health Service,
Director Bureau of Venereal Diseases.*

Physicians are also required to report the names and addresses of patients who discontinue treatment before becoming non-infectious. Upon receipt of such a report a letter is sent to the physician making the report and another letter to the health officer of his county or city. These letters are as follows:

Your report to the effect that _____ is suffering from _____ and has discontinued treatment before becoming non-infectious has been received.

Your health officer will be notified that this case is delinquent, and he is authorized by Section 3, Chapter 206, Public Laws of 1919, to require the patient to report for treatment, or take such other steps as may be necessary to protect the public health.

Permit me to thank you for your coöperation in efforts to control venereal disease. These diseases can be brought under control only through coöperative efforts of all agencies concerned, among the most important of which is the physician.

Very respectfully,

MILLARD KNOWLTON,

*Regional Consultant, U. S. Public Health Service,
Director Bureau of Venereal Diseases.*

The enclosed copy of a report just received in this office indicates that the patient has refused or discontinued treatment before becoming non-infectious.

The case is herewith referred to you for investigation and such action as you may find necessary to protect the public health in accordance with the provisions of Chapter 206, Public Laws of 1919, and the rules and regulations passed by the State Board of Health for the purpose of carrying this law into effect.

I would appreciate being informed what your investigation of this case reveals, and what action you feel obliged to take in order to adequately protect the public health.

Very respectfully,

MILLARD KNOWLTON,

*Regional Consultant, U. S. Public Health Service,
Director Bureau of Venereal Diseases.*

When a report of a case of venereal disease gives information concerning the alleged source of infection, a copy of the report is forwarded to the local health officer with the following letter:

A venereal disease report just received in this office gives information concerning the alleged source of infection. A copy of this report is enclosed herewith.

In accordance with the requirements of Chapter 206, Public Laws of 1919, and the rules and regulations adopted for carrying out its provisions, it is requested that you investigate this case and take such action as may be deemed necessary to protect the public health. Appropriate blanks for use in handling such cases will be furnished upon request.

I would appreciate being informed what action you take in this case.

Very respectfully,

MILLARD KNOWLTON,

*Regional Consultant, U. S. Public Health Service,
Director Bureau Venereal Diseases,
North Carolina State Board of Health.*

When a case report indicates that the patient has been under the care of another physician and a search of our records fails to disclose a report made by the other physician the following letter is sent to the physician alleged to have previously treated the patient:

A report has reached this office that a case of venereal disease now being treated by another physician was formerly under your professional care. Your report of this case has not been found among our records.

Thinking that perhaps your failure to report might have been due to lack of report cards, I am enclosing a card for you to use in reporting your next case. I am also enclosing a circular of instructions to be given to your next patient when you make the diagnosis.

Please let us know if we can further serve you.

Very respectfully,

MILLARD KNOWLTON,

*Regional Consultant, U. S. Public Health Service,
Director Bureau of Venereal Diseases.*

When a venereal disease report fails to show the result of a laboratory test the following letter is sent the physician making the report:

Thanks for your report of a case which has just reached this office.

Noting that you did not report laboratory findings in the case, I am taking the liberty of reminding you that the State Laboratory of Hygiene is at your service for making Wassermann tests of specimens of blood or spinal fluid and for making microscopic examinations of smears. This service is free to all physicians of North Carolina.

Upon request the laboratory will furnish you containers in which to ship your specimens. Such requests should be addressed to Dr. C. A. Shore, State Laboratory of Hygiene, Raleigh, N. C.

If we can be of further service to you do not hesitate to call upon us.

Very respectfully,

MILLARD KNOWLTON,

*Regional Consultant, U. S. Public Health Service
Director Bureau of Venereal Diseases.*

When the Laboratory of Hygiene makes a positive report on a specimen in a case of suspected venereal disease and no report of such case is received from the physician sending in the specimen the following letter is sent to the physician:

The State Laboratory of Hygiene has recently furnished you a positive report on a specimen from a case of suspected venereal disease.

As no report of such disease has been received from you since this examination was made, it has occurred to me that you may be out of cards for making such reports. Accordingly a blank report card and a circular of instructions for your patient are enclosed herewith.

If we can be of further service to you in your work do not hesitate to call upon us.

Very respectfully,

MILLARD KNOWLTON,

*Regional Consultant, U. S. Public Health Service,
Director Bureau of Venereal Diseases.*

When a report is incomplete it is returned to the physician making it with the following letter:

Dear Doctor:

The enclosed report of venereal disease bearing your name does not give all the information required.

Will you be kind enough to fill in the places checked and forward the card to this office by return mail?

Very respectfully,

MILLARD KNOWLTON,

Medical Officer in Charge Bureau of Venereal Diseases.

Pamphlets giving information concerning venereal diseases are mailed to all persons reported by druggists as having purchased venereal disease remedies. This is merely a means of giving instruction and advice to infected persons.

Tabulations of reports are made daily and entered upon a day sheet so that at the end of the month the totals for the month may be obtained by adding the columns on the day sheet. Likewise summing the columns on the monthly sheet will give the totals for the year.

Careful attention is given to furnishing advice and information to the many persons who write or come to the Bureau for help in connection with their personal problems.

Recognizing the fact that venereal diseases, like other communicable diseases, do not stop at racial boundaries, the necessity for dealing with the problem among both white and colored people was early appreciated and a special educational campaign among colored people was inaugurated. At first a colored physician detailed by the Public Health Service together with another employed by this Bureau developed a method of work among colored people that has since been used in other states by the Public Health Service. More recently this Bureau's colored lecturer has been working with the Field Car so that the campaign has been conducted simultaneously among white and colored people.

BUDGET

Federal allotment for first year.....	\$23,988.61	
Total funds available for first year.....		\$23,988.61
Federal allotment for second year, regular.....	\$ 23,988.61	
Federal allotment for second year, special.....	2,106.96	
State funds for second year:		
To duplicate regular Federal allotment.....	23,988.61	
To duplicate special Federal allotment.....	2,106.96	
Total funds available for second year.....		52,191.14
Federal allotment for third year.....	\$ 13,106.06	
State funds to duplicate Federal allotment.....	13,106.06	
Total funds for present year.....		26,212.12

RESULTS

Owing to the intangible character of educational results, the facts that over 200,000 people have been reached by lectures and exhibits and that more than 500,000 pamphlets have been distributed do not give an adequate basis for judging the results of an educational campaign.

It has been interesting to note that pamphlets distributed at lectures, exhibits, fairs and other places have not been thrown about and wasted. In fact people carry away pamphlets on venereal disease more religiously than they carry away pamphlets on any other subject. This indicates that the subject has a gripping interest for the general public.

Not only have the eleven clinics in the state given 59,085 treatments to 4,953 patients during the past two years, most of them represent permanent establishments serving not only their immediate communities, but rendering service to people from remote regions as well.

Perhaps the outstanding result of the two years educational work is the development of a plan of mass education applicable to rural communities. This plan consists in utilizing for public educational purposes the excellent motion pictures made by the American Social Hygiene Association and taking these pictures with lectures to the rural communities. It is carried out by the use of a Field Car equipped with a motion picture outfit including an electric generator, manned by a lecturer and mechanician and preceded by an advance man for making local arrangements and advertising the coming of the exhibition. The cost is shared by the communities served.

Extensive publicity is given to the exhibition through newspaper articles, newspaper advertising and the wide distribution of posters and handbills. Separate meetings are arranged for white and colored people.

The following table shows the total attendance at the lectures in the five counties visited up until the end of November, 1920, together with the per cent of attendance based on the 1920 population of the counties:

County	Population	Attendance	Per Cent Attendance
Cumberland	35,064	11,185	31.8
Harnett	28,313	8,601	30.4
Robeson	54,674	15,763	28.8
Hoke	11,722	2,987	25.5
Durham	42,219	14,724	34.9
Totals	171,992	53,569	31.0

In consideration of the fact that approximately one-half the population consists of children too young to attend exhibitions of this kind the foregoing table shows that more than one-half the adult population in the counties visited have attended the exhibits.

The following table will show the results achieved in the way of reports of venereal disease cases by physicians and the sales of venereal disease remedies by druggists:

VENEREAL DISEASE REPORTS TO THE STATE BOARD OF HEALTH

	REPORTS BY PHYSICIANS		REPORT OF SALES OF V. D. REMEDIES BY DRUGGISTS			
			Number of Reports		Number of Sales	
	1919	1920	1919	1920	1919	1920
January.....	194	661	-----	443	-----	1,290
February.....	178	403	-----	378	-----	1,053
March.....	396	604	-----	263	-----	1,025
April.....	602	583	-----	343	-----	1,075
May.....	732	724	-----	308	-----	918
June.....	549	967	-----	316	-----	926
July.....	769	733	752	295	2,534	1,051
August.....	807	773	618	272	2,216	1,009
September.....	963	799	761	241	2,670	820
October.....	997	737	645	211	2,104	818
November.....	584	582	540	199	1,910	814
December.....	614	443	530	183	1,752	453
Totals.....	7,385	8,009	3,846	3,452	13,186	11,252

REPORT OF AUDIT, STATE BOARD OF HEALTH

December 14, 1920

DR. W. S. RANKIN, *Secretary and Treasurer,*
North Carolina State Board of Health,
Raleigh, N. C.

DEAR SIR:—As requested, I have audited the books of the State Board of Health for the two years ended November 30, 1920, and herewith submit detailed statements of the appropriations, earnings and expenditures of the various departments, together with a balance sheet of the fund accounts showing the condition of the funds at the close of the two fiscal years.

The accounting of the State Board of Health is complete and accurate, the transactions being shown in detail and supported by proper vouchers. Furthermore, the books are arranged to show at a glance the condition of the funds of each department.

All books and papers were promptly placed at my disposal and every opportunity was afforded for making my examination as complete as might be desired.

Respectfully submitted,

J. J. BERNARD,
Certified Public Accountant.

NORTH CAROLINA BOARD OF HEALTH

GENERAL FINANCIAL REPORT

RECEIPTS

Balance, November 30, 1918.....		\$ 8,211.45	
<i>State Appropriations—</i>			
State Board of Health, 1919.....	\$ 57,225.00		
State Board of Health, 1920.....	57,225.00		114,450.00
Bureau of County Health Work, 1919.....	\$ 19,252.85		
Bureau of County Health Work, 1920.....	27,500.00		46,752.85
Bureau of Epidemiology, 1919.....	\$ 9,000.00		
Bureau of Epidemiology, 1920.....	9,000.00		18,000.00
Bureau of Medical Inspection of Schools, 1919.....	\$ 100.00		
Bureau of Medical Inspection of Schools, 1920.....	50,000.00		50,100.00
Bureau of Venereal Diseases, 1919.....	\$ 6,724.13		
Bureau of Venereal Diseases, 1920.....	22,427.61		29,151.74
Bureau of Vital Statistics, 1919.....	\$ 10,000.00		
Bureau of Vital Statistics, 1920.....	10,000.00		20,000.00
<i>From Other Sources—</i>			
Executive Department, 1919.....	\$ 1,147.97		
Executive Department, 1920.....	350.73		1,498.70
Bureau of County Health Work, 1919.....	\$ 44,162.66		
Bureau of County Health Work, 1920.....	99,353.54		143,516.20
Bureau of Engineering and Inspection, 1919.....	\$ 5,338.21		
Bureau of Engineering and Inspection, 1920.....	25,984.35		31,322.56
Bureau of Epidemiology, 1919.....	\$ 6,370.85		
Bureau of Epidemiology, 1920.....	7,604.75		13,975.60
Bureau of Medical Inspection of Schools, 1919.....	\$ 75.00		
Bureau of Medical Inspection of Schools, 1920.....	702.18	\$ 777.18	
Bureau of Public Health Nursing and Infant Hygiene, 1920.....	\$ 4,269.57		4,269.57
Bureau of Venereal Diseases, 1919.....	\$ 27,084.95		
Bureau of Venereal Diseases, 1920.....	24,274.23		51,359.18
Bureau of Vital Statistics, 1919.....	\$ 3,856.07		
Bureau of Vital Statistics, 1920.....	3,592.37		7,448.44
Grand total.....			\$ 540,833.47

EIGHTEENTH BIENNIAL REPORT

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DISBURSEMENTS

Executive Department, 1919.....	\$ 22,363.35		
Executive Department, 1920.....	55,466.09	\$ 77,829.44	
Bureau of County Health Work, 1919.....	\$ 60,998.84		
Bureau of County Health Work, 1920.....	131,661.76	192,660.60	
Bureau of Engineering and Inspection, 1919.....	\$ 9,521.74		
Bureau of Engineering and Inspection, 1920.....	35,741.77	45,263.51	
Bureau of Epidemiology, 1919.....	\$ 18,225.49		
Bureau of Epidemiology, 1920.....	17,472.81	35,698.30	
Bureau of Medical Inspection of Schools, 1919.....	\$ 27,922.58		
Bureau of Medical Inspection of Schools, 1920.....	39,166.58	67,089.16	
Bureau of Infant Hygiene, 1919.....	\$ 6,608.73		
Bureau of Public Health Nursing and Infant Hygiene, 1920.....	\$ 9,724.8	6,608.73	
Bureau of Venereal Diseases, 1919.....	\$ 28,444.93	9,702.48	
Bureau of Venereal Diseases, 1920.....	54,100.09	82,545.02	
Bureau of Vital Statistics, 1919.....	\$ 17,544.81		
Bureau of Vital Statistics, 1920.....	19,054.04	36,598.85	
Grand total.....			\$ 553,996.09
Overdraft, November 30, 1920.....			\$ 13,162.62

FUND BALANCE SHEET

At Close of Fiscal Year

	November 30, 1919	November 30, 1920	
Cash in bank and office.....	\$ 456.41		\$ 16,218.79
Executive Department.....	\$17,899.04	\$ 2,265.90	
Bureau of County Health Work.....	2,834.47		626.44
Bureau of Engineering and Inspection.....		3,757.42	
Bureau of Epidemiology.....	585.52		
Bureau of Medical Inspection of Schools.....	19,335.14	1,407.69	
Bureau of Public Health Nursing and Infant Hygiene		432.91	
Bureau of Venereal Diseases.....	5,364.15	2,034.10	
Bureau of Vital Statistics.....	429.37	3,891.04	
State Treasurer.....	6,462.26	3,056.17	
Totals.....	\$26,683.18	\$26,683.18	\$ 16,845.23

NORTH CAROLINA BOARD OF HEALTH

APPROPRIATIONS, EARN

For the Fiscal Year

Totals— All Departments		Executive Depart- ment
\$ 8,211.45	Balances from preceding year.....	\$ 4,322.91
102,301.98	<i>State Appropriations—</i>	
	General appropriations.....	34,791.51
	Rural Sanitation.....	
	Control of Diseases.....	
	Prevention of Blindness.....	
	Venereal Disease Control.....	
	Vital Statistics.....	
	Medical Inspection of Schools.....	
\$ 76,534.46	<i>Other Appropriations—</i>	
	United States Interdepartmental Social Hygiene Board.....	
	United States Public Health Service.....	
	International Health Board.....	
	Counties.....	
\$ 11,501.25	<i>Other Receipts—</i>	
	Bureau of the Census.....	
	License fees.....	1,147.97
	Miscellaneous.....	
\$198,549.14	Total available for expenditure.....	\$ 40,262.39
191,630.47	Total expenditures.....	22,363.35
\$ 6,918.67	Balances.....	\$ 17,899.04
	<i>Distribution of Expenditures—</i>	
\$52,049.04	Salaries.....	\$ 10,324.63
162.20	Other services.....	162.20
1,843.84	Indexing.....	
3,960.94	Census.....	
3,639.03	Postage.....	910.83
650.86	Telephone and telegraph.....	243.42
210.85	Freight, drayage, express.....	32.78
231.26	Books and magazines.....	66.46
76.00	Membership dues.....	52.00
1,365.39	Furniture and fixtures.....	16.10
15,414.67	Traveling expenses.....	1,595.21
632.37	Traveling expenses and per diem.....	632.37
1,068.93	Automobile.....	1,065.00
489.73	Office supplies.....	63.01
381.77	General supplies.....	192.78
2,002.05	Dental supplies.....	
291.47	Nurses' supplies.....	
21.50	Addressograph.....	21.50
603.61	Multigraph.....	147.00
2,066.43	Signs.....	
720.00	Silver nitrate.....	
614.84	Influenza epidemic.....	614.84
8,900.27	Anti-typhoid campaigns.....	
100.00	Field work.....	
5,773.47	Printing.....	5,770.22
382.25	Repairs.....	369.40
170.13	Photographs, cuts, etc.....	34.66

*Overdraft.

EIGHTEENTH BIENNIAL REPORT

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INGS AND EXPENDITURES

Ended November 30, 1919

Bureau of County Health Work	Bureau of Engineering and Inspection	Bureau of Epidemiology	Bureau of Infant Hygiene	Bureau of Medical Inspection of Schools	Bureau of Venereal Diseases	Bureau of Vital Statistics
\$ 314.59	\$ -----	\$ 1,677.78	\$ -----	\$ 1,226.23	\$ -----	\$ 669.94
1,865.59	4,183.53	-----	6,608.73	7,186.21	-----	2,589.43
17,490.47	-----	1,762.38	-----	-----	-----	-----
-----	-----	6,000.00	-----	-----	-----	-----
-----	-----	3,000.00	-----	-----	6,724.13	-----
-----	-----	-----	-----	100.00	-----	10,000.00
-----	-----	-----	-----	-----	27,084.95	-----
741.47	-----	-----	-----	-----	-----	-----
10,227.62	-----	-----	-----	-----	-----	-----
33,193.57	-----	5,286.85	-----	-----	-----	-----
-----	-----	-----	-----	-----	-----	3,531.57
-----	5,338.21	-----	-----	75.00	-----	324.50
\$ 63,833.31	\$ 9,521.74	\$ 18,811.01	\$ 6,608.73	\$ 8,587.44	\$ 33,809.08	\$ 17,115.44
60,998.84	9,521.74	18,225.49	6,608.73	27,922.58	28,444.93	17,544.81
\$ 2,834.47	\$ -----	\$ 585.52	\$ -----	\$ *19,335.14	\$ 5,364.15	\$ *429.37
-----	-----	-----	-----	-----	-----	-----
\$ 900.00	\$ 4,715.47	\$ 5,680.39	\$ 4,187.42	\$ 15,899.55	\$ -----	\$ 10,341.58
-----	-----	-----	-----	-----	-----	1,843.84
-----	-----	-----	-----	-----	-----	3,960.94
112.00	254.00	206.00	1,039.77	254.00	-----	862.43
42.36	65.95	71.29	27.62	144.52	-----	55.70
2.57	99.20	34.38	8.47	31.46	-----	1.99
4.95	19.50	22.00	92.35	26.00	-----	-----
13.00	-----	5.00	1.00	5.00	-----	-----
6.00	355.45	330.01	166.50	351.03	-----	140.30
717.38	1,732.77	1,941.74	703.69	8,657.09	-----	66.79
-----	-----	-----	-----	-----	-----	3.93
32.09	65.95	57.53	83.77	32.78	-----	154.60
-----	84.88	21.10	.75	2,002.05	-----	82.26
-----	-----	-----	-----	291.47	-----	-----
10.04	4.77	187.53	224.14	17.44	-----	12.60
-----	2,066.43	720.00	-----	-----	-----	-----
-----	-----	8,900.27	-----	100.00	-----	-----
-----	-----	-----	3.25	-----	-----	7.85
25.20	28.12	43.25	7.25	5.00	31.65	-----

NORTH CAROLINA BOARD OF HEALTH

APPROPRIATIONS, ETC.,

Totals— All Departments		Executive Depart- ment
	\$ 25.00	\$ 25.00
	5.00	5.00
	24.00	5.00
	28.00	
	4.80	
	7.55	
	22.35	
	7,136.09	
	10,005.42	
	4,538.74	
	6,764.68	
	59,133.25	
	51.00	3.00
	61.69	10.85
\$191,630.47		\$ 22,363.35
	Total expenditures.....	

Bureau of Engineering and Education balance transferred to Executive Department Dec. 1, 1918

EIGHTEENTH BIENNIAL REPORT

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FOR 1919—CONTINUED.

Bureau of County Health Work	Bureau of Engineering and Inspection	Bureau of Epidemiology	Bureau of Infant Hygiene	Bureau of Medical Inspection of Schools	Bureau of Venereal Diseases	Bureau of Vital Statistics
\$-----	\$-----	\$-----	\$-----	\$-----	\$-----	\$-----
			19.00			
			23.00	5.00		
				4.80		
				7.55		
				22.35		
					7,136.09	
					10,005.42	
					4,538.74	
					6,764.68	
59,133.25	28.00	5.00		5.00		10.00
	1.25		15.75	33.84		
\$ 60,998.84	\$ 9,521.74	\$ 18,225.49	\$ 6,608.73	\$ 27,922.58	\$ 28,444.93	\$ 17,544.81

NORTH CAROLINA BOARD OF HEALTH

APPROPRIATIONS, EARN
For the Fiscal Year

Totals— All Departments		Executive Depart- ment
\$ 6,918.67	Balances from preceding year.....	\$ 17,899.04
176,152.61	<i>State Appropriations—</i> General..... Rural Sanitation..... Control of Diseases..... Prevention of Blindness..... Medical Inspection of Schools..... Venereal Disease Control..... Vital Statistics.....	34,950.42 ----- ----- ----- ----- ----- ----- -----
134,221.46	<i>Other Appropriations—</i> United States Interdepartmental Social Hygiene Board..... United States Public Health Service..... International Health Board..... Counties..... American Red Cross.....	----- ----- ----- ----- -----
31,910.26	<i>Other Receipts—</i> Bureau of the Census..... License Fees..... Miscellaneous.....	----- ----- 350.73
\$349,203.00	Total available for expenditure.....	\$ 53,200.19
362,365.02	Total expenditures.....	55,466.09
\$*13,162.62	Balances.....	\$ *2,265.90
	<i>Distribution of Expenditures—</i>	
	Salaries.....	\$ 12,155.31
	161.18	44.50
	1,101.85	-----
	4,282.58	-----
	4,263.72	990.80
	948.59	256.75
	208.79	63.22
	145.28	49.10
	101.50	70.00
	1,936.88	1,059.06
30,159.10	Furniture and fixtures.....	1,829.53
840.42	Traveling expenses.....	840.42
574.29	Traveling expenses and per diem.....	-----
611.42	Automobile.....	-----
422.89	Office supplies.....	58.10
1,822.03	General supplies.....	209.45
249.11	Dental supplies.....	-----
1 4.43	Nurses' supplies.....	-----
266.47	Addressograph.....	104.43
672.90	Multigraph.....	245.55
1,740.43	Signs.....	-----
545.46	Silver nitrate.....	-----
7,744.12	Influenza epidemic.....	482.29
5,238.93	Anti-typhoid campaign.....	-----
29,478.85	Field work.....	4,421.92
2,779.53	Printing.....	29,477.35
240.06	Repairs and permanent improvements.....	2,738.25
	Photographs, cuts, etc.....	38.45

*Overdrft.

EIGHTEENTH BIENNIAL REPORT

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INGS, AND EXPENDITURES

Ended November 30, 192

Bureau of County Health Work	Bureau of Engineering and Inspection	Bureau of Epidemiology	Bureau of Medical Inspection of Schools	Bureau of Public Health Nursing and Infant Hygiene	Bureau of Venereal Diseases	Bureau of Vital Statistics
\$ 2,834.47	\$ -----	\$ 585.52	\$ *19,335.14	\$ -----	\$ 5,364.15	\$ *429.37
2,882.73	6,000.00	282.54	6,391.85	5,000.00	-----	2,000.00
27,217.46	-----	6,000.00	-----	-----	-----	-----
-----	-----	3,000.00	-----	-----	-----	-----
-----	-----	-----	50,000.00	-----	22,427.61	-----
-----	-----	-----	-----	-----	-----	10,000.00
-----	-----	-----	-----	-----	22,999.23	-----
2,824.00	-----	-----	-----	-----	-----	-----
17,512.16	-----	-----	-----	-----	-----	-----
79,017.38	-----	7,599.12	-----	-----	-----	-----
-----	-----	-----	-----	4,269.57	-----	-----
-----	-----	-----	-----	-----	-----	3,550.35
-----	25,939.35	-----	-----	-----	-----	-----
-----	45.00	5.63	702.18	-----	1,275.00	42.02
\$ 132,288.20	\$ 31,984.35	\$ 17,472.81	\$ 37,758.89	\$ 9,269.57	\$ 52,065.99	\$ 15,163.00
131,661.76	35,741.77	17,472.81	39,166.58	9,702.48	54,100.09	19,054.04
\$ 626.44	\$ *3,757.42	\$ -----	\$ *1,407.69	\$ *432.91	\$ *2,034.10	\$ *3,891.04
-----	-----	-----	-----	-----	-----	-----
\$ 1,549.99	\$ 21,074.51	\$ 6,297.65	\$ 22,872.59	\$ 6,591.97	\$ -----	\$ 11,379.41
-----	96.40	-----	-----	-----	-----	20.28
-----	-----	-----	-----	-----	-----	1,101.85
-----	-----	-----	-----	-----	-----	4,282.58
128.00	571.02	4.00	352.00	756.00	-----	1,462.10
101.95	224.46	79.82	181.51	49.01	-----	55.09
1.16	69.87	13.70	47.86	6.19	-----	6.79
-----	30.25	5.50	29.33	12.60	-----	18.50
23.00	-----	-----	8.50	-----	-----	-----
110.03	118.40	40.20	-----	259.59	-----	349.60
744.30	11,811.05	585.29	13,378.60	1,799.90	-----	10.43
-----	-----	-----	-----	-----	-----	-----
-----	574.29	-----	-----	-----	-----	-----
66.85	139.92	60.95	17.90	53.15	-----	205.55
-----	112.97	4.11	-----	5.00	-----	91.36
-----	-----	-----	1,822.03	-----	-----	-----
-----	-----	-----	249.11	-----	-----	-----
-----	-----	-----	20.92	-----	-----	-----
-----	672.90	1,740.43	-----	-----	-----	-----
-----	-----	55.28	-----	-----	-----	7.89
-----	-----	7,744.12	-----	-----	-----	-----
-----	-----	817.01	-----	-----	-----	-----
1.25	-----	2.25	-----	1.25	-----	1.50
156.20	36.91	5.50	3.00	-----	-----	36.53

APPROPRIATIONS, ETC.,

Totals— All Departments		Executive Depart- ment
\$ 164.40	Bonds premiums.....	\$ 61.90
13.59	Charts.....	13.59
331.82	Exhibits.....	195.86
21.93	Advertising.....	3.18
10,880.22	Administration.....	
13,695.31	Treatment.....	
2,962.06	Repressive measures.....	
26,309.56	Educational and publicity.....	
128,779.03	County Health Work.....	
18.00	Petty cash.....	
627.46	Miscellaneous.....	57.28
\$362,365.62	Total expenditures.....	\$ 55,466.09

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FOR 1920—CONTINUED

Bureau of County Health Work	Bureau of Engineering and Inspection	Bureau of Epidemiology	Bureau of Medical Inspection of Schools	Bureau of Public Health Nursing and Infant Hygiene	Bureau of Venereal Diseases	Bureau of Vital Statistics
\$-----	\$ 102.50	\$-----	\$-----	\$-----	\$-----	\$-----
-----	-----	-----	2.00	133.96	-----	-----
-----	-----	-----	-----	18.75	-----	-----
-----	-----	-----	-----	-----	10,880.22	-----
-----	-----	-----	-----	-----	13,695.31	-----
-----	-----	-----	-----	-----	2,962.06	-----
-----	-----	-----	-----	-----	26,309.56	-----
128,779.03	-----	-----	-----	-----	-----	-----
-----	10.00	5.50	-----	-----	-----	2.50
-----	96.32	2.50	181.23	15.11	252.94	22.08
\$ 131,661.76	\$ 35,741.77	\$ 17,472.81	\$ 39,166.58	\$ 9,702.48	\$ 54,100.09	\$ 19,054.04

APPENDIX

**Annual Meeting of the North Carolina State Board of Health,
Pinehurst, N. C., April 16, 1919.**

All the members of the Board were present, President Way presiding.

The Secretary asked if he should read the minutes of the last meeting, stating that there were about twelve pages of the minutes, and if the Board preferred, he would simply give a resume of the minutes and the reading of the minutes could be dispensed with. This suggestion was adopted.

The Secretary then stated to the Board that on account of the character of the recent legislation, it would be necessary for the Board to have a rather prolonged meeting, two or three days, in Raleigh about July 15, and suggested that if it was agreeable with the Board he would lay before them at this time only those matters needing immediate attention. The Board seemed agreeable to this course.

The Secretary stated that the only matter of any importance requiring immediate action was the question of adopting some definite salary policy for the Executive Staff of the State Board of Health; that in order for the Board to deal with the question of salaries, it seemed advisable for them to have information with respect (1) to the salaries being paid by the State of North Carolina to various officers, and (2) to the attitude of the last General Assembly on the question of an increase in salary for State officials. The Secretary then called attention to the salaries that were paid to the various State officers, including the Judiciary and the officers of the University and other State schools. He called attention to the fact that the last General Assembly made a distinction in salaries to be paid persons with scientific training and holding technical offices, and salaries to be paid persons without special training and holding political offices. He pointed out the fact that the General Assembly allowed the Chairman of the Roads Commission a salary of \$5,500; that it increased the salary allowed the State Superintendent of Public Instruction from \$3,000 to \$4,000; that it provided for an increase in the remuneration of the State Health Officer through funds paid by the Federal Government, which would give the said officer a total salary of about \$5,000.

The Secretary then read the following letter from Doctor Shore:

"Raleigh, N. C., April 12, 1919.

Dr. W. S. Rankin,
Secretary, North Carolina Board of Health.
Raleigh, N. C.

Dear Dr. Rankin:—

Will you kindly convey to the Board of Health my request for an increase of salary?

As every one knows, living expenses have increased during the past few years so that a stationary salary means in effect, a very real reduction.

In the second place, I may be allowed to refer to the fact that the State Laboratory of Hygiene is not only a diagnostic laboratory, but is a really large manufactory of biological products, sending out material to the

value of over two hundred thousand dollars annually. We are far ahead of most of the other states in this work, but I refer to it here only to state that in similar enterprises of private ownership throughout the country, the director in charge is able to command a salary from two to five times as great as is paid to the Director of your laboratory.

The last point I wish to make is done with some hesitancy as I would like the matter to be decided only on its own merits. However, the Board would doubtless prefer to be fully informed so I may be allowed to mention the fact that I have several times been offered positions which pay a larger salary and one in particular during the present month, though not as yet in official form, offering me a salary of \$5,000.

I repeat that I mention this not because I wish in any way to appear to "hold-up" the Board, but I do request an increase of salary if my services have been satisfactory.

Very respectfully,

(S) C. A. SHORE."

In commenting on the letter from Dr. Shore, the Secretary pointed out the fact, first, that had Doctor Shore gone into the Army, he would have received considerably more for his services than he received on his present salary; that the probabilities were that at the termination of his service in the Army he would have had little difficulty in resuming work, through the influence of favorable contact with officers of the Army, at a much higher salary than the State is now paying him; that Doctor Shore's service to the State of North Carolina depends not only upon his unquestioned ability as a high class scientific laboratory man, but upon an element of equal importance, namely, the confidence of the medical profession and of the people of the State in his findings. Doctor Rankin pointed out that this confidence was absolutely essential for the development of the Laboratory to the highest degree of usefulness, and that it was a factor in laboratory development comparable to the establishment of confidence in a business firm or confidence in the value of some commercial product; moreover, that the confidence which Doctor Shore had justly acquired was a thing that required years to attain, and that a change in the head of the Laboratory to a new man, no matter how able the successor, would leave the Laboratory weakened on account of the time, several years, necessary for the new management to acquire the complete confidence of the profession and of the public as Doctor Shore has it.

The Secretary stated that it seemed wise, in adopting the salary policy, to give consideration, first, to the amount of money handled as an index to the size of the business transacted by the different bureaus, and second, to the length of time in which an officer had served the State and the amount of experience that had been acquired by an executive officer. The Secretary closed his statement by telling the Board that the fixing of salaries was a matter that they should handle and not the chief executive officer for obvious reasons, and that he desired that his remarks on this question be received as suggestions.

After considerable discussion by various members of the Board, the following resolution was adopted:

Resolved, by the North Carolina State Board of Health,

First, that the State Registrar of Vital Statistics, under the provisions of the chapter 1027, section 25, Public Laws of 1919, amending chapter 15,

Public Laws Extra Session of 1913, be allowed, after the net cost of transcribing birth and death certificates is paid, the balance of the funds paid to the Treasurer of the State Board of Health by the Bureau of the Census, provided such balance does not exceed two cents for each certificate transcribed.

Second, that the annual salaries of the chiefs of bureaus shall be as follows: For bureaus maintained on annual budgets of less than \$25,000, \$2,500; for bureaus maintained on annual budgets in excess of \$25,000, \$3,000.

Third, that after the first year's service as chief of a bureau, an officer shall be paid \$50 additional for each year of service until a maximum salary of \$3,000 annually is received by an officer in charge of a bureau expending less than \$25,000 a year, and a maximum salary of \$3,500 annually is received by an officer in charge of a bureau the annual budget of which is in excess of \$25,000.

Fourth, that the above increases shall apply to the chief of the Bureau of Tuberculosis.

Fifth, that the salary of the director of the State Laboratory of Hygiene shall be \$4,000 a year, and that the director be allowed an annual increase of \$50 for each year of service until a maximum salary of \$4,500 a year is reached.

Sixth, that each bureau chief now in the service of the Board be credited, as above provided, with the additions to his salary according to the number of years that he has been in the service of the Board.

Seventh, that all of the aforesaid advances in salary be in effect on and after December 1, 1918.

Eighth, that the assistant secretary of the State Board of Health shall receive a fixed annual salary of \$3,000.

This resolution was unanimously adopted.

It was then moved and carried that the Secretary be instructed to write a letter to each Chief of Bureau, conveying the sincere appreciation of the Board to the said officer and all of the employees of the Bureau for the faithful and satisfactory service that had been rendered; and that in the case of the Sanatorium, the Secretary write a letter of special appreciation to Mrs. L. B. McBrayer for her fine influence and untiring efforts in the interest of the Sanatorium.

It was then moved and carried that the Secretary be instructed to write a letter of appreciation to the Governor of North Carolina, the Lieutenant-Governor of North Carolina, the Speaker of the House, and those Senators and Representatives of the General Assembly of 1919 who rendered conspicuous service in the enactment of the public health legislation.

The Board appointed a committee composed of Doctors Laughinghouse and Anderson to prepare resolutions expressing the Board's appreciation to the Secretary of his work.

Doctor Thompson stated that Doctor Wood would not be in a position to accept reappointment on the Board on account of certain important pending arrangements between Doctor Wood and one of the larger univer-

sities of the country, and, in making this announcement, expressed for the Board its high official regard for Doctor Wood for his fine judgment and progressive spirit, and the keen personal regret of each member of the Board on losing him as a colleague.

A motion to adjourn was then offered and carried.

W. S. RANKIN,

Secretary.

**Special Meeting of the North Carolina State Board of Health,
Raleigh, North Carolina, July 7, 1919.**

With President Way in the chair, all members except Doctors Thompson and Tucker were present. Doctor Thompson came in about 4 p. m.

The Secretary stated that the objects of the meeting were (1) to adopt specifications of improved types of privies and to approve official announcements necessary for compliance with, and enforcement of, chapter 71, Public Laws of 1919, entitled "An Act to Prevent the Spread of Disease from Insanitary Privies;" (2) to consider, for adoption, some rules and regulations provided for under chapters 206 and 214, Public Laws of 1919, for the control of venereal diseases; (3) to consider and to take appropriate action with respect to the future relation between the official health agencies of this State and the American Red Cross; and (4) to consider the possibility and the advisability of lending the influence of the Board to the development of a course of instruction at the State University for public health officers, and other matters.

The Board took up, first, the provisions of the law relating to privies, and after six hours consideration, adopted as an official announcement, as the plans and specifications for improved types of privies, and the rules of maintenance for such types of privies, the material contained in the July, 1919, State Board of Health Bulletin, which is hereby made a part of the minutes of this meeting.

The next item considered by the Board was some rules and regulations and forms provided for under chapters 206 and 214, Public Laws of 1919, and submitted by Doctor Keiger for the consideration of the Board. The rules and forms as below were considered and adopted.

**Rules and Regulations for Reporting and Control of Venereal Diseases
Promulgated by the North Carolina State Board of Health July 7, 1919,
as authorized by chapter 206, Public Laws of 1919.**

Rule I. It shall be the duty of every physician who makes a diagnosis in, or treats a case of venereal disease (gonorrhea, syphilis, or chancroid), to report such case within three days after making the diagnosis or beginning the treatment, giving information as called for on a special form furnished by the North Carolina State Board of Health known as "Physician's Report of Venereal Disease."

Note 1. The physician has the option of reporting by name or identification number. If report is made by number, then the physician must keep in his office a record of such case, corresponding to this number.

Rule II. The physician who makes a diagnosis in, or treats a case of venereal disease, shall give to such patient a circular or pamphlet of instructions and information furnished by the North Carolina State Board of Health. (It is suggested that the case number of the patient be written on the pamphlet.)

Rule III. When a patient suffering with a venereal disease refuses, or discontinues, treatment before becoming non-infectious, it shall be the duty of those attending such patient to report him or her to the Bureau of Venereal Diseases of the North Carolina State Board of Health by name and address.

Note 1. "Non-infectious" shall be construed to mean: (a) In the case of gonorrhea, that there are no longer any gonococci present in any of the discharge as shown by three separate microscopical examinations on three separate days. (b) In the case of syphilis, that the patient is not in the primary or secondary stages of the disease or mucous membranes of any of the various orifices of the body.

Rule IV. On receipt of the name and address of such delinquent patient as mentioned in Rule III, the Bureau of Venereal Diseases of the North Carolina State Board of Health, shall direct him or her either by letter or representative to return for treatment and a failure to comply with such instructions within two weeks will subject him or her to quarantine.

Rule V. Such delinquent patient upon whom the quarantine is invoked shall be restricted to his or her home or premises which shall be placarded with a yellow card "7 x 11" with name of patient and disease with which he or she is suffering written across it. Such quarantine shall be established and maintained by the Chief of the Bureau of Venereal Diseases or his deputy as long as patient is in the infectious state, or until he or she satisfies the quarantine agent that proper treatment is being secured.

Rule VI. When any person suffering with a venereal disease is isolated and treated at public expense as provided for in section 3 of chapter 206, Public Laws of 1919, the treatment shall be continued: (1) In the case of gonorrhea until patient is non-infectious as defined above. (2) In the case of syphilis, until six doses of arsphenamine, or some equivalent drug, has been administered. In those localities where clinics are operated, the treatment shall be given by the Chief of the Clinic. If there is no clinic then the Director of the Bureau of Venereal Diseases of the North Carolina State Board of Health or his deputy shall employ a local physician to carry out the treatment as outlined above, paying such physician the fee current in that locality.

Rules and Regulations for Obtaining Reports of Persons Infected with Venereal Diseases Promulgated by the North Carolina State Board of Health July 7, 1919, as authorized by chapter 214, Public Laws of 1919.

Rule I. Any druggist or other person who sells at retail any of the remedies or drugs mentioned in section 2, chapter 214, Public Laws of 1919, shall make a report of the sales for the previous week each Monday to the Bureau of Venereal Diseases of the North Carolina State Board of Health on forms known as "Report of Sales of Venereal Disease Remedies."

Forms

PHYSICIAN'S REPORT OF VENEREAL DISEASE

Name or Case No.....	Address.....	Date.....
		City or Town
Previously treated?.....	By whom?.....	
What No. did he assign patient?.....	Age.....	Color.....
Sex.....	Married or single?.....	Occupation.....
Disease	Laboratory Findings.....	
Source of infection.....	Date of onset.....	
Any other known cases from same source?.....		
Did you give patient circular of instructions?.....		
Physician		
Address	(City)	(Street and Number)
Do you need report cards, etc?.....		

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REPORT OF SALES OF VENEREAL DISEASE REMEDIES

By (Store or Pharmacy) (Proprietor or Manager)

Date	Name	Address—Street and Number	Art.	Quan.
.....
.....
.....
.....

Mail report each Monday, whether any sales or not, to:

The North Carolina State Board of Health,
Bureau of Venereal Diseases,
Raleigh, N. C.

The following resolution bearing upon the administration of the venereal disease control act, was adopted:

Resolved, that the local authorities who appropriate funds for the support of the venereal disease clinics shall designate some officer to approve all bills, and that no bills shall be paid except upon the approval of such officer, as has heretofore been the practice, and be it further

Resolved, that it is the intent of the Board to limit payment for diagnosis and treatment of venereal diseases to persons who are indigent and who cannot otherwise receive proper treatment, and be it further

Resolved, that all expense accounts incurred by either State or local authorities for the diagnosis and treatment of venereal diseases shall be open to all persons and to all members and officers of this board.

Dr. Geo. M. Cooper, director of the Bureau of Medical Inspection of Schools, came before the Board and asked to be permitted to discuss certain problems confronting his department, and asked for any suggestions that the Board had to make regarding the handling of his work. After hearing Doctor Cooper, the Board seemed to be fully satisfied with his direction of the work and with his policies for the future of his Bureau, and, therefore, made no suggestions.

Dr. B. E. Washburn, director of the Bureau of County Health Work, came before the Board and asked to be allowed to make a statement regarding the recent dismissal by the Board of the County Health Director of Pitt County, Dr. C. P. Fryer. In making this statement, Dr. Washburn related to the Board that in requesting Dr. Fryer's resignation that he had told Dr. Fryer that the Board would grant him salary for one month following the date on which his resignation took effect, July 10. Dr. Washburn stated that Dr. Fryer, since his resignation, had done everything within his power to embarrass the Board and to make it appear that the action of the Board with respect to his resignation was uncalled for and unjust, and that he therefore thought that before payment of salary for the last month to Dr. Fryer was made in accordance with his statement to Dr. Fryer, that the understanding as to salary should be brought to the attention

tion of the Board for their approval or disapproval. The Secretary of the Board suggested that under the circumstances he would be pleased to have the Board record itself as disapproving the payment of any salary to Dr. Fryer since the date of his resignation, June 10. The Board then adopted the following resolution:

Resolved, that the North Carolina State Board of Health revoke the statement of Doctor Washburn to Doctor Fryer that his salary for one month following his resignation would be paid him, and instruct the Secretary not to pay Dr. C. P. Fryer for any time since the date of his resignation, June 10.

Continued Meeting of the State Board of Health, July 8, 1919.

The Secretary stated to the Board that owing to the decision of the American Red Cross to enter the field of public health, to employ and direct a large public health nursing force, and owing to the further fact that no understanding or plan of co-operation had been adopted or existed for correlating the work of the American Red Cross in the field of public health with that of the official health agencies of the country, already a great deal of friction not only in this State, but in the other states of the Union, between state and local health authorities and Red Cross agents had developed, and that this friction in other states and in this State was threatening the harmonious relationship of the official health agencies not only with the Red Cross, but with each other. The Secretary further stated that the American Red Cross was potentially powerful financially to assist or interfere with the work of the state boards of health and local boards of health, and that owing to this lack of understanding and that owing to the possibilities for good on the one hand and harm on the other, that he wished the board to take the initiative in meeting the responsibilities of the situation. The Secretary further stated that in his opinion and in accordance with his observations, the higher officers of the American Red Cross felt just as the State Health Officers of the Union feel, that some kind of understanding or plan of co-operation is needed and needed at the earliest possible date in order to prevent further friction, disorganization, and harm. The Secretary related numerous occurrences in North Carolina bearing out the above statement, and called attention to certain elements of dissatisfaction existing in the Executive Staff of the State Board of Health on account of the lack of co-operation and understanding between the two agencies—the Red Cross and the State Board of Health.

The Secretary made a rather full statement regarding the aforesaid condition, and asked Doctor McBrayer, whom he had requested to be present and whom he had reason to believe, on account of a letter received from Doctor McBrayer under date of June 3, to hold views somewhat in conflict with his own as to a desirable relationship with the Red Cross, to state to the Board any observations or opinions that he had in regard to the matter under consideration. After a statement by Doctor McBrayer and after a full discussion by various members of the Board, the following resolution was adopted:

Resolved, that the North Carolina State Board of Health at the request of the Secretary, assumes responsibility and relieves its Executive Officer of all initiative and responsibility for any work of the Board in co-operation

with the American Red Cross; and it is the sense of the Board that in any public health work which it may undertake with the American Red Cross, such work must be undertaken on a similar basis of co-operation as is now in effect between this Board and the United States Public Health Service and the International Health Board.

The following resolution was adopted:

Resolved, that the North Carolina State Board of Health officially requests the American Red Cross to send a representative committee, with power to act, to Raleigh, North Carolina, at an early date to confer with a committee of the State Board of Health for the purpose of considering and, if possible, adopting a plan of co-operation in public health work for North Carolina between this State and the American Red Cross.

The following resolution was adopted:

Resolved, that a special committee of three be appointed by the president of the North Carolina State Board of Health, and to include himself, to confer with a committee of the American Red Cross to arrange, if possible, a plan of co-operation in public health work for North Carolina between this Board and the American Red Cross.

Under this resolution, the President appointed the following officers of the Board to act with himself: Drs. R. H. Lewis and Cyrus Thompson.

The Secretary then stated to the Board that Col. J. L. Ludlow, who for a number of years had served the Board without consideration for his own time or convenience and without compensation, in the capacity of consulting engineer, did not feel he could longer render this service to the State Board of Health, and that both Col. Ludlow and the Secretary felt that the Board was now financially able to pay for service rendered as consulting engineer. Col. Ludlow recommended as consulting engineer Mr. J. P. Justin, of Winston-Salem. Following this statement, the Board passed the following resolution:

Resolved, that Mr. J. P. Justin, of Winston-Salem, be asked to act as consulting engineer to this Board, and that in the event Mr. Justin will accede to this request, he be paid a salary of \$100 per month, the salary being effective on and after July 1, 1919.

W. S. RANKIN.

Secretary.

**Minutes of Meeting Special Committee State Board of Health for Conference
With Committee of American Red Cross.
Raleigh, N. C., September 18, 1919.**

The Committee, consisting of Dr. J. Howell Way, President of the State Board of Health, Dr. Richard H. Lewis, and Dr. Cyrus Thompson, members of the State Board of Health, met in the office of the Secretary with a Committee representing the American Red Cross, composed of Miss Elizabeth Fox, Miss Jane Van De Vrede, and Miss Virginia Gibbs, and the following agreement was drawn up and signed by the representatives of the two agencies:

Agreement Between the American Red Cross and the North Carolina State Board of Health for a Co-operative Plan of Work Between the Two Agencies for the State of North Carolina.

(For full text of agreement, see page 65 of this report.)

**Minutes Special Meeting of the North Carolina State Board of Health
Raleigh, North Carolina, December 15, 1919.**

All members of the Board were present, with the exception of Dr. F. R. Harris, who was absent and confined in the Jefferson Hospital, Philadelphia, on account of a slight surgical operation.

The minutes of the last meeting, September 18, in which an understanding was reached with a representative committee of the American Red Cross, were approved.

The Secretary then brought before the Board of Health what he stated was the most serious condition affecting the health work of the State, to wit, the small salaries now being paid to health officers. Doctor Rankin stated that the experiences of the last year demonstrated one of two things: either that the State health work, including the county work, must be greatly interfered with or delayed, rather, by inability to secure health officers at the salaries offered and by inability to hold health officers after they had been secured, or the salary scale for health officers would have to be raised. The Secretary stated in support of his statement that within the last six months he had lost four directors of bureaus out of the seven bureaus under his immediate direction. One of the bureau chiefs resigned on account of illness; the other three, Doctor Crouch, Doctor Keiger, and Mrs. Vaughn, gave up their work because they were offered larger salaries for work elsewhere. Doctor Rankin stated further that during the past year there had been vacancies in county health work as follows:

Bertie for 4 months.
Beaufort for 4 months.
Vance for 8 months
Nash for 2 months.
Pitt for 1½ months.
Harnett for 1 month.
Union for 1 month.
Edgecombe for 1 month.

Doctor Rankin further stated that out of eight county health officers under the direction of this board, five had resigned because of more attractive remuneration in other fields. It was pointed out that there are only three full time county health officers in the fourteen counties now at work that have been in office for more than a year. The Secretary stated that unless the salary scale could be increased, that he would continue as he had been doing for the last year, to run a training school for health officers who, after acquiring from six to twelve months' experience, would leave the State for other fields. The Secretary stated that during the past year his work had been more difficult on account of having to deal with new and inexperienced men than in any other year in the history of his administration. Doctor Rankin insisted that this condition was dangerous not only to the efficiency of the Board, but to its reputation, and that it would be only a matter of time when, if the present practice of making use of inexperienced men because of low salaries was continued, some serious mistake or mistakes would be made which would rob the Board of much of the public respect and confidence which it now has.

Following a general discussion of this subject of salaries, it was moved and voted that the salaries of the following officers be increased as indicated:

Dr. G. M. Cooper.....	\$3,600
Dr. A. J. Warren.....	3,300
Dr. F. M. Register.....	3,300
Mr. H. E. Miller.....	3,000

The next matter considered by the Board was the work for the Bureau of Medical Inspection of Schools. Doctor Cooper made a full report of his work for the past year, as indicated on the following pages:

**Treatment Record of Bureau of Medical Inspection of Schools,
January 1 to December 1, 1919.**

A. DENTAL DEPARTMENT

County	Population	School Population	Number Children Treated	Number Permanent Fillings	Cost
Alamance.....	28,712	9,618	851	2,440	-----
Buncombe (Asheville).....	18,762	7,470	539	1,052	-----
Cherokee.....	14,126	4,879	588	969	-----
Cumberland.....	35,284	11,906	817	2,200	-----
Durham.....	35,266	13,325	587	763	-----
Forsyth.....	47,311	18,601	1,583	2,182	-----
Graham.....	4,749	1,597	388	512	-----
Guilford.....	60,407	20,363	1,208	1,601	-----
Jackson.....	12,998	4,897	479	747	-----
Lenoir.....	22,769	8,502	317	439	-----
Macon.....	12,198	4,951	723	886	-----
Mitchell.....	17,245	3,745	391	792	-----
Northampton.....	22,323	7,815	224	405	-----
Pitt.....	36,340	13,537	665	1,070	-----
Pender.....	15,471	5,483	543	1,262	-----
Rowan.....	37,521	13,009	876	921	-----
Sampson.....	29,982	10,028	991	1,505	-----
Surry.....	29,705	11,267	422	457	-----
Swain.....	10,403	3,499	230	602	-----
Union.....	33,277	12,795	197	228	-----
Wilkes.....	30,282	11,639	1,054	1,883	-----
Yancey.....	12,072	5,228	427	736	-----
Total (22).....	567,213	204,284	14,103	23,742	\$13,970.53

NOTE: The itemized cost to each county is not given, because the equipment and supplies are used interchangeably and because time cannot be assigned evenly as to weekly or monthly division. The above figures represent the total cost for equipment, supplies, salaries, and expenses of the dentists. The intangible, educational value of the work cannot be estimated, but had the children had the work done at private offices, it could not have cost them less than \$50,000.00

**Treatment Record of Bureau of Medical Inspection of Schools,
January 1 to December 1, 1919.**

B. MEDICAL DEPARTMENT

County	Population	School Population	Number Children Operated on	Number Free	Cost
Alamance.....	28,712	9,648	98	10	\$ 1,030.93
Buncombe (Asheville).....	18,762	7,470	60	11	502.16
Cherokee.....	14,136	4,979	69	11	821.01
Gaston.....	35,284	11,906	5	-----	50.00
Haywood.....	21,020	7,615	71	8	737.50
Hertford.....	15,436	5,152	23	-----	287.50
Jackson.....	12,998	4,897	60	15	526.56
Macon.....	12,198	4,951	49	29	347.00
Madison.....	20,732	7,653	75	11	962.11
Mitchell.....	17,245	3,745	33	4	361.18
Northhampton.....	22,323	7,815	40	2	475.00
Pitt.....	36,340	13,537	38	2	413.55
Sampson.....	29,982	10,028	83	8	818.75
Swain.....	10,403	3,499	60	16	548.80
Transylvania.....	7,191	2,899	110	15	1,265.07
Wilkes.....	30,282	11,639	86	19	823.78
Yancey.....	12,072	5,228	75	11	825.11
Total (17).....	344,516	121,161	1,035	172	\$10,796.01

NOTE: Total amount expended by State Board of Health for salaries, equipment and other expenses of nurses, physicians and others in their work in the above seventeen counties for the above period is \$5,291.53.

Per cent. operations free to children.....	16.71%
Cost per child to patient or county.....	10.43
Cost to State if nurses did nothing but get operations done.....	5.11
Total cost of operations for child.....	15.54
Lowest cost for child anywhere in North Carolina by reputable operator, if done privately.....	35.00
Lowest estimate of saving to patients.....	20,141.10

In Asheville the fee is \$100 plus hospital extras and anesthetic. The total average is never less than \$150 to out-of-town patients. In Wilmington, Fayetteville and other places with \$35 fee the total is never less than \$60 for out-of-town patients.

The relation of the work of Doctor Cooper's bureau to the medical profession was fully discussed, and it seemed to be the sense of the Board that no change should be made in the general policies of the bureau.

Doctor Rankin stated the results of a recent conference with E. C. Brooks, State Superintendent of Public Instruction, and with ex-Governor Brumbaugh of Pennsylvania, in regard to the proposal of the Bureau of Education, Department of the Interior, to introduce a bill in Congress in January based upon the federal aid extension principle and appropriating \$25,000,000 for medical inspection of schools, for the teaching of hygiene, and for the detection and treatment of physical defects of school children. The Secretary stated that the understanding with Doctor Brooks and Governor Brumbaugh was that the administration of the funds appropriated

to the states under the federal act would be left largely to the state legislature to determine the machinery. Doctor Rankin stated further that as a result of the conference it was decided to call together some of the health authorities of the State, together with some of the educational forces, for a conference in January.

The next matter discussed was the work of the Bureau of Venereal Diseases. Doctor Rankin stated that the sex hygiene problem could be rather definitely divided into three parts: (1) Prostitution and repression; (2) sex education; and (3) venereal disease control. He set forth his plan for prostitution and repression, which consisted briefly of

(1) Securing a first-class attorney with such standing in North Carolina and in the courts as would give him the desirable and necessary influence in influencing the public generally and the judges, solicitors, and other court officers particularly in the enforcement of the recent act against prostitution. As the tenure of such an attorney would be uncertain after July 1, 1920, on account of the expiration of federal funds, it would be necessary to pay a good salary for such legal service, perhaps at the rate of \$5,000, \$6,000 or \$7,000 a year, as the type of man desired could not afford to interrupt his work for five or six months for a smaller consideration. It seemed to be the general sense of the Board that a man like Judge Frank Carter would handle the problem admirably.

The next type of man or men needed is a detective or detectives for making the necessary investigations and securing evidence for the attorney to use in (1) convicting the people of the prevalence of prostitution in North Carolina, and (2) legal proceedings to clean up certain places where prostitution exists. Doctor Rankin stated that funds for employing the under-cover men or detectives could be obtained from the Federal Government, and that he was in hopes that a part of the salary of the attorney directing the work could also be obtained from federal sources.

The Secretary then introduced Mr. Coor, who has charge of the educational division of the sex hygiene work, working under the direction of Doctor Knowlton. Mr. Coor made a most encouraging statement to the Board of the progress of the work under his immediate direction. Mr. Coor's statement is given below:

"The educational division of the Bureau of Venereal Disease has cut out for its task for the year ending June 30, 1920, the taking of a message on sex education and venereal disease, by lecture, exhibit and pamphlets, to as many people in the State and rural communities along three lines—

I. *General Publicity.* Through newspapers, church organs, etc., the educational division plans to take a message to the masses in an attempt to create a public consciousness for and interest in:

- (a) The prevalence and ravages of venereal diseases;
- (b) The necessity of the repression of prostitution, with a view of securing live interest and active co-operation;
- (c) The elimination of quack doctors and their practices and quack medicines;
- (d) The national campaign being conducted by the U. S. Public Health Service and the various State organizations, particularly the North Carolina effort.

II. *Sex Education.* Special campaigns are now well under way in an effort to bring to leaders who touch boy and girl life, such as parents,

teachers, ministers, physicians, and social service workers, a sane message and to leave in various communities sex education committees to continue this effort as a permanent work of a community. It is the belief of many of the leaders that if the venereal diseases are to be eventually controlled or eliminated it will be the result of a carefully worked out sex education program. Sex education is not primarily a health matter and does not properly come within the activities of the State Board of Health, but the opportunity presented itself and it is the purpose of the State Board of Health to interest other institutions and organizations, such as colleges and schools, and then eventually turn the matter entirely over to them.

Dr. T. W. Galloway, of the International Committee of the Y. M. C. A., has been assigned to North Carolina for one month and has met with unusual success in taking the message of sex and its relation to life to various groups of leaders in many cities of the State. Seven national Y. W. C. A. Secretaries have been assigned to the State for one month to work among girls and leaders of girls in several communities. The sex educational campaign is only a small part of the whole.

III. *General Education Concerning Venereal Diseases.* It is the plan of the educational division to carry on a very intensive campaign among the masses of people in as many cities as possible, a general education campaign through exhibits and the various motion picture films on hand. It is believed that many of the other problems, such as repression of prostitution, larger use of clinics for treatment, etc., will be more easily handled when general knowledge is disseminated through the educational effort.

IV. *Work Among Colored People.* Under the leadership of Dr. Burton of the U. S. Public Health Service, assigned to this office for an unlimited time, special messages concerning the venereal menace have been taken to the colored population of North Carolina through churches, lodges, conferences, etc. Doctor Hughes, a colored physician of Greensboro, North Carolina, has been secured to direct this department of the educational work and the results during the month of December have been entirely satisfactory. The International Y. M. C. A. has assigned to North Carolina for an unlimited period Mr. F. A. Nichols to work among the colored colleges of the State. His work has also been very satisfactory. We have the assurance of the National Y. W. C. A. that they will assign to North Carolina for at least two months one of the leading workers among colored girls and women of the country.

All of the expenses of these lecturers will be cared for by the organizations sending them. Special plans are being worked out for a very intensive State-wide campaign among our colored people.

V. *The Industrial Campaign.* Special campaigns to take to the industrial communities of the State a message concerning sex and the venereal diseases are being worked out and the assistance of a number of national leaders is being sought. This will be one of our most effective efforts, we think.

VI. *Rural Campaign.* Various State organizations are being lined up to assist in taking to the rural people of our State, both white and colored, both sex education and venereal disease messages.

VII. *The "Keeping Fit" Campaign.* A special campaign is now under way to reach the boys of high school age in the State with a special "Keeping Fit" card and slide exhibit. It is expected that at least 50,000 boys will be reached by June 30, 1920.

VIII. *College Campaign.* Special efforts will be made among the colleges and prep schools of the State, both male and female, in an effort to bring to student bodies both the sex education and venereal disease message.

Following Mr. Coor, Doctor Knowlton discussed the general plan for securing reports of cases of venereal diseases and for treating venereal diseases under the dispensary plan. Doctor Knowlton stated that the dispensary plan for treating venereal diseases was inadequate to meet

the needs of this State, and would reach only about 20 per cent of the population, and that it was therefore necessary that some plan be devised for dealing with the venereal diseases in the rural sections of the country, and of North Carolina in about 80 per cent of our population who are rural in their residence.

Doctor Rankin then described the general plan which he has in mind for rural counties, and which is as follows:

By letter, literature and personal conference with the doctors, meeting them collectively, and, where this is impossible, as many as possible individually, and securing the following understanding with the profession:

That the reporting of venereal diseases by physicians is in line with the higher ideals of the profession and to the business advantage of the doctors, because a reported case of venereal disease imposes upon the State, and the State assumes, the obligation of keeping the diseased person under treatment until such person is no longer infectious. In the fulfillment of this obligation to the profession, it will be the duty of the doctors to report their cases of disease that stop treatment before becoming non-infectious, giving the name and address of the patient, under the receipt of which the State will require the patient to either report again to some member of the profession for treatment or to show by an official certificate issued by the register of deeds that he is indigent and cannot pay for treatment, in which case the State will authorize a regular registered physician to treat the patient and the State will assume the expense of the treatment. The laws of the State and the rules and regulations of the State Board of Health will permit of this procedure.

The Board approved of the plan.

Dr. Way then requested the Board to instruct the Secretary to collect and submit to a later meeting of the Board all data regarding the cost of producing and distributing antitoxin both in this State and in other states. The motion was then amended to include all biological products. The Secretary stated to the Board that he would appreciate an amendment to the motion, which would leave to the President the appointment of a committee to make a study and recommendations to the Board rather than have this done by the Secretary. The Secretary stated that he had some very decided opinions about antitoxin production and distribution, and therefore did not feel that he would make as unbiased study and report as a committee appointed for that purpose. The motion was then amended, substituting a committee for the Secretary. President Way appointed as this committee:

Dr. Chas. O'H. Laughinghouse, Dr. Cyrus Thompson, and Dr. E. C. Register.

Mr. H. E. Miller, director of the Bureau of Engineering and Inspection, then made a short and encouraging report of the work of his bureau, more especially the enforcement of the law requiring the installation of sanitary privies in the towns and villages of this State.

A motion to adjourn was made and carried.

W. S. RANKIN,
Secretary.

**Minutes Annual Meeting of the North Carolina State Board of Health,
Charlotte, North Carolina, April 21, 1920**

All of the members of the Board were present with the exception of Col. Ludlow and Dr. F. R. Harris.

The following amendment to the quarantine rules and regulations was unanimously adopted:

Resolved: That the regulation adopted on September 26, 1918, by the State Board of Health be hereby amended by omitting the words dysentery (bacillary and amoebic) cholera infantum (summer diarrhoea of infants), lobar pneumonia, and broncho-pneumonia, so that it shall read as follows:

That Paratyphoid fever and Trachoma are hereby declared infectious and contagious and are made reportable as provided for in Section 9, chapter 263, Public Laws of 1917."

A communication from Miss Elizabeth G. Fox, Director of Public Health Nursing of the American Red Cross, to the Secretary regarding standard rules for public health nursing was read and fully discussed. The standard orders submitted by Miss Fox in her letter were approved for general nurses and for public health nurses in emergencies, but the Board expressed itself as being strongly and unanimously of the opinion that public health nurses should devote themselves largely to the work of prevention rather than medical relief, and to this end that the two units for infant hygiene and tuberculosis, as detailed in the official contract of the Board with the American Red Cross, be given, always, the right of way over bed side work.

The Board discussed the grading of the Bulletins at some length, the object of the discussion being that the different members of the Board should be in accord as to methods of grading and understand the general principles to be followed as laid down in the original letter of the Secretary to the members of the Board, enclosing "Plan of Bulletins for 1920."

The next matter brought to the attention of the Board was the plan of campaign for typhoid vaccination of the citizens of the State for the summer of 1920. The Board was asked by the Secretary to approve the employment of Mr. Taylor, a member of the faculty of Wake Forest, Professor of Bacteriology and Embryology, but who is not a medical graduate. Mr. Taylor, on the other hand, it was stated, thoroughly understands the principles of bacteriology and infection and in eighteen months service in the Army had given thousands of vaccinations. The Board approved the employment of Mr. Taylor.

The Secretary then discussed his plan for the development of local health work in North Carolina upon a basis of financial equivalents. The Secretary went fully into the matter and the Board were unanimous and apparently enthusiastic in their approval of the development of State health work on the basis of financial equivalents.

The Secretary next called to the attention of the Board the work of the North Carolina Landowners Association for malaria control. The Board of Health was deeply interested and ordered that the Secretary express to Mr. McGirt their deep interest and keen appreciation in the work of the North Carolina Landowners Association in the improvement of public health.

Dr. Rankin then brought to the attention of the Board the request of Mr. W. A. McGirt, Vice-President and General Manager of the North Caro-

lina Landowners Association that the Board co-operate financially with that Association in the employment of Dr. Charles E. Low for his full time to give public health lectures in the small towns and rural communities of Eastern North Carolina. The Board ordered that the Secretary notify Mr. McGirt that out of the funds appropriated for rural sanitation we could pay one-fourth of the cost of the educational work for which Dr. Low was being considered. The Board further directed the Secretary to communicate with the International Health Board and to ascertain if that body would assume one-fourth of the expense of the proposed work of Dr. Low, with the hope that the two agencies, the International Health Board and the State Board of Health, might assume one-half of the expense.

The Advisory Council on Venereal Diseases then made a report of its work to the Board. Dr. Knowlton read the report. The Board adopted the following resolution:

"Be it Resolved, that the outline of treatment recommended by the Advisory Council be adopted by the State Board of Health as representing the best thought of the present day concerning the treatment of venereal disease in North Carolina, and the principles set forth therein be commended to the careful consideration of the medical men in the State, and be it further

Resolved, that this Board endorse the principle that except in duly authorized experimental work under competent investigators, officials who expend public funds for the treatment of venereal diseases may reasonably expect such treatment to conform in general to the accepted principles and procedures set forth in this outline."

The following rules and regulations for the control of venereal disease were then adopted:

RULES AND REGULATIONS FOR THE CONTROL OF VENEREAL DISEASES GENERAL RULES, DEFINITIONS AND STANDARDS

Rule I. Any person reported by a legally qualified physician as refusing or discontinuing treatment before becoming non-infectious, and who refuses or fails to return for treatment after notice from the health officer having jurisdiction, shall be considered a proper subject for examination in accordance with the provisions of Section 3, Chapter 206, Public Laws of 1919.

Rule II. For the purpose of carrying out the requirement making it the duty of all health officers to "Co-operate with the proper officials whose duty it is to enforce laws directed against prostitution," all pimps and prostitutes and all other persons who may be under arrest charged with sex offenses or released on bail pending trial for such offenses, shall be considered proper subjects for examination for venereal disease.

Rule III. No health officer, physician, or other person shall issue a certificate of freedom from venereal disease in such form that it may be used for purposes of solicitation.

Rule IV. The word "isolate" as used in Section 3, Chapter 206, Public Laws of 1919, is held to mean restriction of the infected person to the home or premises where such person is usually domiciled, and the exclusion from such home or premises of all other persons except medical and nursing attendants and members of the immediate family of the isolated person.

Rule V. The word "quarantine" as used in Section 3, Chapter 206, Public Laws of 1919, is held to mean detention of an infected person in a place other than such person's usual home or domicile. Quarantine rather than isolation shall be the procedure used in dealing with all infected pimps and prostitutes that are not held through court action.

Rule VI. The procedures of enforced treatment, isolation, and quarantine are designed for the protection of the Public Health, and are therefore applicable only to cases capable of transmitting infection to others. The minimum criteria for determining this capability for the purpose of requiring treatment, or establishing isolation or quarantine shall be as follows:

(a) In the case of syphilis, a diagnosis of syphilis with open lesion of skin or mucous membrane, or lesion of the testicle in the male. A positive Wassermann test alone is not considered a sufficient warrant for regarding a patient as infectious.

(b) In the case of gonorrhea a diagnosis of gonorrhea based on either clinical findings, or the demonstrated presence of an intracellular or Gram negative diplococcus in secretions from the genito-urinary tract, or on both clinical and laboratory evidence.

(c)* In the case of chancroid, a diagnosis of chancroid with open lesion of skin or mucous membrane.

Rule VII. In any case where isolation or quarantine is ordered after an examination or examinations by a health officer or his deputy, the person alleged to be infected may appeal in writing to the county or municipal board of health having jurisdiction for another examination or examinations to confirm the diagnosis. The Board of Health to whom such appeal is made may at their discretion require the person making the appeal to pay the cost of examination and to deposit with the written appeal a sum not exceeding ten dollars (\$10) for that purpose. Upon receipt of such written appeal, accompanied by the required fee, the board of health shall appoint another physician to consult with and assist the health officer in making such additional examination or examinations as may be necessary to reach an agreement as to diagnosis. Specimens for laboratory tests taken in the additional examination or examinations shall be sent to the State Laboratory of Hygiene.

Rule VIII. The standards for discharge from enforced treatment, isolation, or quarantine as non-infectious shall be as follows:

(a) In the case of syphilis complete healing of all lesions of skin or mucous membrane and of the testicle in the male.

(b) In the case of gonorrhea the absence of discharge or other clinical signs and the absence of Gram negative diplococci in secretions from the genito-urinary tract on three separate days when smears are made according to instructions issued by the State Laboratory of Hygiene.

(c) In the case of chancroid complete healing of all lesions of skin or mucous membrane.

RULES FOR PATIENTS

Rule 1. Every person who knows or has reasonable grounds to suspect that he or she is infected with a venereal disease (syphilis, gonorrhea, or chancroid) shall forthwith place himself or herself under the care and treatment of a legally qualified practitioner of medicine, or shall report to the County or Municipal Health Officer for examination to determine whether or not such infection exists.

Rule 2. Each and every person under treatment for venereal disease shall continue treatment until non-infectious according to standards for the discharge of carriers fixed by these Rules and Regulations. (These standards are given under general rules.)

Rule 3. Nothing in these Rules and Regulations shall be construed to abridge the right of a patient to ask for consultation, change physicians, or apply to the county or municipal health officers for information and advice in case such patient should suspect an incorrect diagnosis or an undue prolongation of treatment or be threatened with a revelation of identity if treatment is discontinued.

Rule 4. No person infected with syphilis in communicable form shall engage in the occupation of nurse, nurse-maid, domestic servant, barber, hair-dresser, chiropodist, manicure, bath attendant, masseur, or any other occupation in which syphilitic infection may be transmitted to others. No person infected with syphilis in communicable form or gonorrhea shall engage in any occupation which involves intimate contact with children.

Rule 5. Every person infected with venereal disease in communicable form shall obey all lawful orders issued by the health officers having jurisdiction.

RULES FOR PHYSICIANS

Rule 1. All reports of cases of venereal disease required by Section 2, Chapter 206, Public Laws of 1919, shall be made in writing within forty-eight hours after diagnosis, on blanks prepared by and obtainable from the North Carolina State Board of Health, and all information called for in said blank shall be furnished in each case.

Rule 2. All such reports shall be made direct to the State Board of Health, *provided* that when reports made on approved forms to county or municipal health authorities in accordance with local ordinances are promptly forwarded to the State Board of Health, duplicate reports will not be required.

Rule 3. Whenever any legally qualified physician is willing to assume responsibility for such conduct on the part of a venereal disease patient as will not expose others to infection, such physician shall have the privilege of reporting such case by number without disclosure of name. In all cases where such responsibility is not assumed by a legally qualified physician, the name and address of the patient shall be given in the report. Any physician who elects to report a case of venereal disease by number shall keep in his office a record of the case under the same number.

Rule 4. Any physician who makes a diagnosis of a case of venereal disease shall immediately give to the infected person a copy of a circular or pamphlet of instructions and information furnished by and obtained from the North Carolina State Board of Health.

Rule 5. Should any person afflicted with a venereal disease refuse or discontinue treatment before becoming non-infectious according to the standards prescribed by these Rules and Regulations it shall be the duty of the physician examining or treating such patient to report the fact of refusal or discontinuance of treatment, together with the name and address of such patient to the health authority to whom cases of venereal disease are required to be reported. Such report shall be made within one week of refusal for treatment or failure of the patient to keep an appointment for treatment. *Provided* that such report shall not be required if the physician first consulted shall receive within the time appointed for making the report a written statement from another legally qualified physician to the effect that said patient is under his professional care for the same disease.

RULES FOR HEALTH OFFICERS

Rule 1. County or Municipal Health Officers who receive reports of cases of venereal disease in accordance with the requirements of local regulations shall, within seven days after receiving such reports, make copies for their own records and transmit the originals to the State Board of Health. All such reports shall be so marked as to show plainly that they have passed through the hands of the local health officer.

Rule 2. All reports of venereal disease shall be regarded as confidential, and records of such reports shall not be open to public inspection. It shall be the duty of all health officials and other persons who have charge of or access to such records to make every reasonable effort consistent with the protection of the public health to keep secret the identity of persons affected by venereal disease control measures.

Rule 3. In carrying out the provisions of Section 3, Chapter 206, Public Laws of 1919, each local health officer or his authorized deputy shall promptly investigate all cases of suspected venereal disease about which information is obtained from the patient, the physician, the police authorities, the State Board of Health, or other reliable source. Such investigation shall include inquiry concerning the presence of venereal disease in communicable form, the habits and occupation of the patient, and such other matters as may be necessary to determine what steps are required to protect the public health.

Rule 4. Whenever such investigation reveals the presence of venereal disease in communicable form, the health officer or his deputy shall issue a written order for carrying out one of the following three procedures:

(a) Treatment till non-infectious by a private physician or at public expense while at liberty.

(b) Isolation with placarding of house.

(c) Detention under quarantine.

The issuing officer shall keep a copy of each order issued for use in court in case it should become necessary to prosecute for violation of the order.

Rule 5. In requiring treatment the order shall be issued to the infected person, or to the parent or guardian in case of a child under sixteen years of age, and shall specify that the infected person shall:

(a) Report to a legally qualified physician of the patient's own choosing or to a physician provided at public expense for treatment.

(b) Continue treatment till non-infectious.

(c) Not expose any other person to infection.

(d) Not move away from the jurisdiction of the health officer issuing the order without giving twenty-four hours notice of intent to move so that the health officer at intended place of residence may be notified.

Upon receiving notice from such patient of intent to move a health officer shall immediately mail a notice to the health officer at intended place of residence, or to the State Board of Health if such officer is unknown.

Rule 6. In establishing isolation the order shall be issued to the person isolated, or to the parent or guardian in case the person isolated is a child under sixteen years of age. Each building or apartment where isolation is established and maintained shall be placarded with a yellow card not less than 7 x 11 inches in size, bearing the words "Venereal Disease."

Rule 7. In establishing quarantine the order of quarantine shall be issued to the sheriff or other person in charge of the jail or other institution where quarantine is to be maintained. Likewise a detention order shall be issued to the person in charge of the institution where the person suspected of being infected is held under detention till the results of an examination are known.

Rule 8. In carrying out the provisions of Section 6, Chapter 206, Public Laws of 1919, local health officers may apply to the State Board of Health for permission to require any prisoner who is still infectious at the expiration of a term of imprisonment to report to a licensed physician for treatment, or submit to treatment at public expense, in lieu of continued treatment in prison. Such application shall state the name, address, sex, age, and occupation of the infected person, the name of the disease with which such person is infected, and state that in the judgment of the health officer the proposed method of handling the case is not dangerous to the public health.

Rule 9. The term "health officer" as used in Chapter 206, Public Laws of 1919 and in these Rules and Regulations is held to include quarantine officers. In case the Health Officer or Quarantine Officer is not a legally qualified physician, he shall act in matters that concern the enforcement of these Rules and Regulations only on the advice of such a physician.

The Board ordered that the Secretary express to the different members of the Advisory Council on Venereal Diseases its very deep appreciation for their very efficient and valuable service.

A motion that the Advisory Council on Venereal Diseases be continued was made and carried.

Before adjourning, the Board ordered that the minutes should record its keen sense of loss in the death of Dr. E. C. Register, for six years one of its most interested and valuable members.

W. S. RANKIN,
Secretary.

**Minutes Special Meeting of the North Carolina State Board of Health.
Office of the Secretary, Raleigh, North Carolina, October 25, 1920.**

The President, Dr. J. Howell Way, called the Board to order at 9:50 a. m. All members of the Board were present except Dr. Harris, who came in about 12 o'clock.

The first matter of business was the consideration of the general budget of the Board for approval and submission to the General Assembly of 1921. The Secretary presented the budget in the form of a detailed statement according to the divisions and bureaus of the Board, exclusive of the Laboratory and the Sanatorium, and according to all items of income and disbursement for each bureau. With the proposed budget was shown for comparison detailed statements of the income and expenses of the Board for the fiscal years 1919 and 1920. These statements are made a matter of record and are in the files of the President of the Board. The budget as submitted was unanimously approved.

Dr. Shore, Director of the State Laboratory of Hygiene, then presented a statement showing the expenses of the State Laboratory of Hygiene and requested that the Board approve a request of the Legislature for an appropriation of \$55,000 annually for the support of the laboratory. Dr. Shore indicated in his statement the principal items of cost in the work of the laboratory, but pointed out in doing so that whereas he was asking for \$55,000, it could easily be shown that the work performed by the laboratory during the last year had a financial value of \$374,000. The budget requested for the laboratory was then approved. The statement of expenses on which this budget was requested was made a matter of record and is in the files of the President.

The next matter brought to the attention of the Board was a request from the Board of Education of the Baptist State Convention that the schools of that denomination within the State be included within the Board's inspection service. On hearing this request the Board passed unanimously the following resolution:

"Resolved, that the North Carolina State Board of Health accede to the request of the Board of Education of the Baptist State Convention that the Baptist schools and school grounds be included in the regular inspection service of the State Board of Health, and

"Resolved, further, that the State Board of Health desires to commend the Board of Education of the Baptist State Convention on their wisdom in utilizing this service of the Board for protecting boys and girls in the Baptist schools of the State from unsanitary conditions, and for establishing a precedent worthy of the attention of our other church schools."

The Board then considered a proposition to request the General Assembly to amend the State-wide privy law to the extent of either eliminating the 40 cents inspection tax on each privy, or, if the Assembly desired to retain the tax, to make it collectable as other taxes are, by the sheriffs, and to grant in lieu of the said tax for the support of the Bureau of Engineering and Inspection a direct appropriation sufficient to maintain the said bureau. The Board unanimously approved the proposed amendment to the law.

The Board then considered a suggestion from the Bureau of Epidemiology that the State law for the control of contagious diseases be amended by

striking out the words "contagious and infectious" where they appear in the law and inserting in lieu thereof the word "preventable." The proposed amendment would give the law wider scope and would enable the Board to require the reporting of pellagra. It was then moved and carried that the amendment suggested by the Bureau be approved, and that a suitable bill be presented to the Legislature effecting the amendment.

The secretary then brought to the attention of the Board some minor but desirable amendments to the hotel inspection law, but informed the Board that this law would be considered for revision at an early date by a committee representing jointly the Travelers' Protective Association of North Carolina, the Merchants' Association, and the State Hotel Association. It was moved and carried that the secretary be directed to represent the State Board of Health, with power to act, in conference with the aforesaid committees.

The attention of the Board was next called to an account of Dr. Luther T. Buchanan, Jr., rendered against the Board for a typhoid vaccination campaign carried on in Franklin County under a written understanding governing the conduct of county vaccination campaigns, prepared and entered into with Dr. Buchanan and others in the spring of 1920. In connection with the account the memorandum was presented to the Board and read. A letter from Dr. Buchanan, under date of September 29th, setting forth rather fully why he thought he was entitled to his claims against the Board, was also presented and considered. After discussing the account the Board passed the following resolution:

"Resolved, that the items of oil and gas, tire, wash, and repair of automobile be not allowed on account of these items having been covered in the rent paid to Dr. Buchanan for the use of his machine—\$125 for three weeks, and

"Resolved, further, that the item of \$57.13 for helper is not justified on account of the small number of persons vaccinated and the fact that a helper was unnecessary under the circumstances."

The next matter brought before the Board for their consideration and action was the proposed budget for the State Sanatorium for 1921-22. This budget was presented and explained by the superintendent of the Sanatorium, Dr. McBrayer, and a copy of the budget is on file in the president's folder. The most important new item contained in Dr. McBrayer's budget, an item involving a new policy on the part of the State, was an appropriation of \$200,000 for a negro sanatorium. The budget as presented and explained by Dr. McBrayer was then by formal resolution unanimously approved by the State Board of Health.

Dr. McBrayer then asked the Board to consider the advisability of requiring the laboratory to report the names and addresses of all persons whose sputa was sent in either by themselves or by a physician, and in the latter case to give the name and address of the physician, for an examination for tubercle bacilli. Dr. McBrayer made this request in order that he might better check up the report of cases as now required under State laws. The secretary called the attention of the Board to the fact that the reporting to the Bureau of Venereal Diseases of specimens of blood submitted to the laboratory for the Wassermann test should be included in their consideration of reports from the laboratory to bureaus for a better check on case report-

ing, as reports of both laboratory examinations involve the same principle. After some discussion it was finally moved and carried that the laboratory report to the Sanatorium the name and address of persons whose sputa was submitted for an examination for tubercle bacilli, together with the name of the physician submitting the sputa or having it done; and that the laboratory report to the Bureau of Venereal Diseases the name of the physician submitting a specimen of blood for the Wassermann test, together with the name and address of the person, where given, from whom the specimen was obtained.

The next matter considered by the State Board of Health was the account of S. H. Couch Company vs. the Sanatorium. The Secretary submitted considerable correspondence that has accumulated in regard to this matter and Dr. McBrayer explained that the reason the account had not been paid was that he regarded it as excessive in many particulars and that he was withholding payment in order to bring the creditor to an attitude of reasonableness. The Board re-referred the settlement of this account to Dr. McBrayer, the superintendent of the Sanatorium, with the suggestion that in the settlement of the account not more than \$500 in addition to that already paid on the account be paid.

The secretary then made a brief report to the board upon the typhoid vaccination campaign for the summer, and also upon the new sex hygiene campaign as carried out by the moving picture film outfit. Dr. Rankin stated that the campaign as carried on by the Board this summer would reach not less than 31,000 persons. He explained that the moving picture educational outfit, consisting of a large motor truck equipped with an engine for generating electricity, with electrical devices for operating a high-class moving picture machine, and equipped with six or eight very fine sex hygiene moving picture films, and under the direction of a personnel of five experts, the whole operating at a cost of approximately \$100 per day, was the first definite effort on the part of the American Social Hygiene Association, the Venereal Disease Bureau of the Federal Government, and the State Board of Health to reach the purely rural population with information designed to protect them from the danger and effects of venereal diseases. The secretary stated that this outfit had now been operating since August 9th and had worked in the counties of Cumberland, Harnett and Robeson, reaching perhaps one-half of the population of those allowed to see and hear the lectures, children under 12 not being admitted. The secretary stated that this attempt to reach and protect the rural population, the first of the sort in the United States, was most promising and that he regarded it as by far the most important phase of the campaign against venereal diseases now being carried on in North Carolina.

The secretary then, at the request of the president, brought to the attention of the Board the matter of improving the physical care and instruction of college students. It was stated that interest in this question was as yet rather sporadic, but that there was evidence that certain universities in this country, particularly the University of Minnesota, the University of Michigan, Harvard University, and, recently, the University of North Carolina, were developing a lively interest in this question. The secretary stated that at the request of the president several weeks since he had written to certain officials in the universities mentioned for information and refer-

ences to literature on this matter, and that he was now collecting this sort of material with the hope and with the expectation that the State Board of Health would authorize the president to appoint a commission consisting of the college physicians or others connected with the colleges especially interested in this question, to take the material collected and to prepare a plan which could receive the endorsement of the Board for emphasizing with the colleges of the State and with the public generally not only the desirability but the necessity of giving more attention to the physical condition of their students and their instruction in hygiene and sanitation. It was moved and carried that the president appoint such a commission. The president stated that he would name the commission at some later date.

The secretary then brought to the attention of the Board the matter of providing some plan for reaching large groups of the population with a physical examination for the purpose of detecting incipient diseases and evidences of physical impairment, resulting from bad hygiene, in their incipiency so that these persons might be either advised in regard to their hygiene of living or, in the more pronounced impairments, referred to physicians while still in a curable stage of their disease. The secretary called attention to the limited scope of the examination for school children—an examination designed to detect the common defects of school children. He pointed out that almost certainly in the beginning the physical examination for school children was much more comprehensive, perhaps planned to include all diseases for which the modern physician examines in an office or consultation call; that in the attempt to reach school children with such an examination it was found that the number of children to be reached was entirely too large for an examination intended to detect all sorts of defects and diseases to which children are liable; that on account of this the limited examination for common defects was devised. The secretary then called attention to the fact that during the last two or three years he had advocated, and to a limited extent had adopted by county health officials, regular examinations as called for in the periodic examination unit of county health work; that this experience had shown that with a complete physical examination such as had been advocated and followed in the past only a small per cent of an adult population could be reached; that in order to reach the hundreds of thousands of adults that should receive physical examinations, it was necessary, as was the case in dealing with school children, to devise a limited examination designed to detect the common and more important defects of adult life. The secretary stated that a motion authorizing the president to appoint a commission of North Carolina physicians to assist in mapping out such an examination and preparing the necessary directions, blanks, rules and regulations for its use, would seem to be the first step in reaching large groups of the population and interesting them in their physical health. A motion was made and carried that such a commission be appointed. The president stated that he would like to take some time in considering the personnel of the commission before making the appointment.

The secretary then stated that if time would permit, he would be glad to have the Board discuss and advise him with respect to the proper relation between the State and the profession to be maintained by its executive officer. The members of the Board expressed themselves as deeply im-

terested in this question. The impression seemed to be general with the members of the Board that scattered criticisms of the Board on account of the relation of its policies to the practice of medicine were not to be understood as expressing the opinion of the organized profession, and that such criticisms were, in nearly all instances, due to misunderstandings on the part of those making the criticisms.

The hour for dinner having arrived, a motion to adjourn was made and carried.

W. S. RANKIN, *Secretary.*

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